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ABSTRACT

Policies and procedures for the implementation of five concepts as steps in the articulation of vocational education programs are presented. Part I of the document provides an introduction to the project and guide development. Part II, organized into six sections, contains the implementation procedures. The first section, "Implementation of Concept 1" (policy guidance, communication, and support) includes the areas of area vocational/occupational education advisory committee, institutional visitations by teachers and students, and local area guidance counselors. The second section discusses administrative policies related to articulation, e.g., advanced credit to occupational qualifications, credit for work or military experience, and resource sharing. Implementation of Concept II (standardized instructional content) is presented in section 3. Topics covered include method of developing task inventories, the instructional objectives guides, and development of an instructional block. Section 4 discusses the implementation of concept III (performance standards), including development and recording of performance standards and standardized performance standard references. Section 5 discusses the implementation of concept IV (advisory committees), including purpose of local area advisory and program committee and occupational advisor functions. The concluding section presents the implementation of concept V (evolution, recognition of job qualifications, and awarding of advanced status credits). The appendixes comprise a major portion of the document and include sample format and content of the instructional objectives guides. Also available are the Project Report (CE 019 108) and Instructional Objective Guides (CE 019 109-111). (JH)

ED164888

POLICIES AND PROCEDURES GUIDE

FOR

THE ARTICULATION OF VOCATIONAL/OCCUPATIONAL EDUCATION PROGRAMS BETWEEN NORTH CAROLINA PUBLIC HIGH SCHOOLS AND COMMUNITY COLLEGES/TECHNICAL INSTITUTES

(STATE PILOT MODEL)

PREPARED BY

THE ARTICULATION OF OCCUPATIONAL EDUCATION PROGRAMS
BETWEEN SECONDARY SCHOOLS AND TECHNICAL
INSTITUTES/COMMUNITY COLLEGES PROJECT

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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JULY 1978

CE 019 108

A JOINT RESEARCH PROJECT SPONSORED BY
THE NORTH CAROLINA DEPARTMENT OF PUBLIC INSTRUCTION
AND
THE NORTH CAROLINA DEPARTMENT OF COMMUNITY COLLEGES

NORTH CAROLINA
STATE DEPARTMENT OF PUBLIC EDUCATION
RALEIGH, N.C. 27611

July 1978

SUBJECT: Application and Implementation of the Policies and Procedures Guide for the Articulation of Vocational/Occupational Education Programs of Instruction

TO: All Administrators, Staffs and Faculties, North Carolina Public School Administrative Units, Public Technical Institutes/Community Colleges and State Department Staffs

This Policies and Procedures Guide has been developed as a joint effort of the Department of Public Instruction and the Department of Community Colleges with the involvement of numerous individuals from our local school administrative units and technical institutes/community colleges participating in the Articulation Research Project, plus others who have expressed interest in this effort. It is intended that this guide be a state pilot model for the provision of policy and procedural guidance for the articulation of vocational/occupational education programs between the public high schools and technical institutes/community colleges of North Carolina. The provisions of this guide are commended for your study and use in this vital area of activity.

Appreciation is expressed to the staffs of the Occupational Research Unit of the Department of Public Instruction and the Office of Program Improvement of the Department of Community Colleges for their joint State level management of this significant endeavor. Additionally, we are indebted to the Project Director, Dr. Carlyle P. Woelfer, for his professional and personal contributions and dedication to the day-to-day operation of the project during the period September 1, 1974-July 31, 1978.

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REVIEW OF STATE PILOT MODEL DRAFT DOCUMENT

The quality and validity of this document were greatly enhanced by the review comments received from persons in the North Carolina secondary school systems and community colleges/technical institutes participating in the Articulation of Occupational Education Programs Project. Involved at the time this document was prepared were 2 community colleges and 6 technical institutes, with 11 city and county schools systems at the secondary level. Additional review comments were provided by individuals with interest in articulation and persons from the State Educational Staff who coordinated and/or supported the project. This guide is the result of true statewide effort. The reviews were performed by a cross section of vocational/occupational education teachers and instructors, supervisiors and guidance counselors, school systems and institutional administrators and state level education staff personnel. These persons were from all parts of the State and represent many educational activities as shown by the list below:

North Carolina State Department of Public Instruction Staff

North Carolina State Department of Community Colleges Staff

Department of Occupational Education, School of Education, North Carolina State University

North Carolina State Advisory Council On Vocational Education

Beaufort County Technical Institute

Fayetteville Technical Institute

James Sprunt Technical Institute

Martin Community College

Mayland Technical Institute

Nash Technical Institute

Piedmont Technical Institute

Western Piedmont Community College

Sampson Technical Institute

Wayne Community College

Wilson County Technical Institute

Avery County Schools

Cumberland County Schools

Duplin County Schools

Fayetteville City Schools

Goldsboro City Schools

Martin County Schools

Person County Schools

Washington County Schools

Wayne County Schools

Yancey County Schools

SPECIAL RECOGNITION

Of the many individuals who graciously reviewed the draft of this document and forwarded their comments and suggestions, special recognition is given to the following persons for their contributions to the improvement of the quality of this guide:

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PART I

INTRODUCTION

Background: Articulation of vocational/occupational education programs between high schools and community colleges/technical institutes has been the subject of discussion in educational circles for many years. In more recent times, the subject has become the object of nationwide concern as well as positive effort. Governmental agencies at both the Federal and State level are on record as advocating the need for articulation of such programs.

On 4 March 1971, the North Carolina State Board of Education issued its policy supporting articulation. That policy was incorporated into the North Carolina Administrative Code on 5 January 1978 under Title 16, Department of Public Education, Chapter 4 - Community College System; Subchapter 4E - Educational Programs, Public Schools and Community College Systems; Paragraph .0501 of Section .0500 - Articulation. This Policies and Procedures Guide is consistent with and implements that portion of the code cited. The North Carolina State Advisory Council on Vocational Education has added its support to such action. Further, official support for articulation in North Carolina is to be found in Paragraph 2, Page 7 of the pamphlet titled "Statements of Philosophy for The North Carolina Community College System", issued by the State Board of Education, Raleigh, N.C., October 1977.

Definition of Articulation: To provide a common basis for understanding and for the purposes of this document, articulation of vocational/occupational education programs is defined as the action resulting from policies and procedures employed to provide for:

1) Vocational/occupational program alignment and continuity in a given occupational area between high schools and community colleges/technical institutes conducting the program;

2) Skills and related technical information required by the student to achieve smooth transition through the various levels of educational experience in that program;

3) Transition of the student from one educational level to another in a given occupational area without unnecessary administrative delay or duplication of effort; and

4) Improved communication and cooperation between institutions, school systems and communities at both local area and state levels, that share interest in the same occupational program(s).

The above definition is recognized by many occupational educators nationwide.

The "Open Door" Admissions Policy and Articulation: The North Carolina Public Technical Institutes and Community Colleges System must by law practice the "Open Door" policy of admissions. This policy requires that vocational/occupational program instruction conducted by these institutions start at the beginner's level. As a result, many vocational/technical courses have instructional content common to those of the vocational courses conducted in the comprehensive high schools of the North Carolina System of Public Elementary and Secondary Schools. For this reason, it is essential that articulation be practiced in North Carolina.

The Articulation Project: The North Carolina State Board of Education approved the initiation of a Department of Community Colleges research and development project which started on 1 September 1974, entitled "Articulation of Occupational Education Programs Between Secondary Schools and Community Colleges/Technical Institutes". The agencies initially cooperating to conduct this project were Duplin County Public Schools and James Sprunt Technical Institute of Kenansville - an articulated effort itself. This project was coordinated by the North Carolina Occupational Research Unit.

The purpose of this project was to develop a comprehensive model plan for the articulation of public high school vocational education programs with the occupational education programs of the technical institutes/community colleges which could serve as a guide for articulation efforts throughout the State. The Duplin County Public Schools/James Sprunt Technical Institute action resulted in the local adoption and application of five basic concepts for articulation from which implementing policies and procedures were developed.

By the summer of 1975 through the joint efforts of the participating high school and technical institute vocational/technical teachers and instructors, the supervisors and craft advisors (employers and workers in the occupations), (with project coordinator guidance) five documents identified as instructional objectives guides were developed for as many programs. These guides were designed to provide a common reference for use by the educators and teachers concerned at both levels of education to ensure that the instructional content and performance standards applied in common courses of instruction were the same. An articulation policies and procedures guide was also developed by 1976. It was based upon the experiences, the concepts, policies and procedures that evolved and were adopted during the development of the instructional objectives guides.

NOTE: For purposes of clarity and accuracy, vocational education and teachers refer to the high school level, whereas occupational education (in most instances) and instructors refer to community college/technical institute programs and personnel.

Extension and Expansion of The Duplin County Articulation Project: Starting 1 August 1976, the Duplin County Schools/James Sprunt Technical Institute project was extended for two years, with the funding provided by both the Department of Community Colleges and the Department of Public Instruction. At this time Sampson Technical Institute also entered into an articulation agreement with the Duplin County Schools to provide continuity for an articulated program no longer conducted by James Sprunt Technical Institute. The project functions were also extended to provide technical assistance to other local areas in the State interested in initiating articulation activities.

In response to the offer for technical articulation assistance, during the period July 1976 to March 1978, schools systems located in Cumberland, Martin, Person, Mitchell, Avery, Yancey, Washington and Wayne Counties entered into articulation agreements with the technical institute/community college(s) that serve them. There were 8 community colleges/technical institutes and 11 city and county school systems involved with and supported by the project when it terminated.

Vocational teachers and occupational education instructor representatives from most of the school systems and community colleges/technical institutes involved in the articulation project met in Raleigh in July 1977 (together with craft advisors from their areas) to revise, update and refine the Duplin Area developed instructional objectives guides for Automotive Mechanics, Drafting and Executive Secretary/Business Education Programs. State staff personnel from both the Department of Public Instruction and the Department of Community Colleges participated in this effort. The result of the joint action was the development of three "State Pilot Model" instructional objectives guides for the programs concerned that could be used in the articulation of subject matter by all participants.

Policies and Procedures Guide Development: This document is an effort to provide a State Pilot Model for articulation policies and procedures. It is the result of the combined input of personnel at all levels of education directly involved in the Articulation Project or with interest in the articulation of vocational/occupational education programs between the high schools and the community colleges/technical institutes of the State. Such persons were asked to review and comment on the draft copy of this guide. It too is based upon the guide originally developed in Duplin County. Research efforts and studies conducted on the subject of articulation in North Carolina, Minnesota, Texas, Michigan and Washington, plus the Vocational-Technical Education Consortium of States (V-TECS) have been used as supportive references in the development of this guide. The concepts for articulation that have been used as the bases for the Articulation Research Project were developed in the research conducted by Carlyle P. Woelfer in preparation of a doctoral dissertation, "A Study of Concepts, Policies and Procedures to Accomplish Vocational-Technical Education Program Articulation Between Secondary Schools and Institutions of the Community College System of North Carolina", North Carolina State University, 1977. (Copyright 1978 - used with permission of author.) The pamphlet "Student Articulation

Between Secondary and Post-Secondary Education", by McKinnerney, B.R., Thomas, R. and Todd, H.R., Texas A&M University, June 1974, U.S. Superintendent of Documents #1780-01294, can be used as a supplement to this guide.

Articulation Concepts and Rationale: The policies and procedures that are detailed in Part II of this guide are based upon and grouped according to their relationship to the concepts of articulation. The concepts are stated below together with their rationale as a means of providing the background for the policies and procedures which implement the concepts.

CONCEPT I: JOINT POLICIES AND PROCEDURES ARE REQUIRED FOR SUCCESSFUL ARTICULATION OF VOCATIONAL/OCCUPATIONAL EDUCATION PROGRAMS BETWEEN HIGH SCHOOLS AND THE COMMUNITY COLLEGES/TECHNICAL INSTITUTES. SUCH POLICIES AND PROCEDURES SHOULD BE ISSUED FROM THE HIGHEST LEVEL OF EDUCATION COORDINATING THE PROGRAM. THEY MUST INCLUDE PROMOTION OF CONTINUING ACTIVITIES SUCH AS COMMUNICATION, COORDINATION, JOINT PLANNING AND MUTUAL SUPPORT OF ARTICULATION BY ALL CONCERNED.

Rationale - Concept I: Studies and experience have shown that there is a need for detailed guidance to implement the articulation of vocational/occupational education program subject matter. This is further complicated by the varying perceptions and basic knowledge that educators have pertaining to articulation. Communication between all persons involved at all levels is essential to the process of articulation. Articulation guidance must be prepared and issued as a joint effort (properly from the State level of education) to be binding on all involved in an articulation activity. A wide variety of policies and procedures and articulated program guides for the same vocational/occupational education program, each developed by a different local area, would be counterproductive to the effort, as well as confusing, a duplication of effort and costly. Maximum effectiveness and involvement are normally achieved if statewide user input from both the secondary and post-secondary levels is utilized to develop vocational/occupational education programs as well as joint operational policies and procedures for articulation. In addition to the joint State level policies, directives, coordination and support, there is also a need for binding local area commitment to articulation in the form of joint local area articulation agreements in order to achieve full cooperation from most of the participants at both levels of education. Since a purpose of program articulation is to preclude student duplication of effort, this should extend to preclude duplication of effort in program development.

CONCEPT II: STANDARDIZATION OF VOCATIONAL/OCCUPATIONAL EDUCATION PROGRAM COMMON OCCUPATIONAL SUBJECT MATTER, BASED UPON INDUSTRY VALIDATED JOB TASK INVENTORIES WHICH SPECIFY THE COMPETENCIES REQUIRED FOR JOB QUALIFICATION, IS NECESSARY IF LOCAL AREA OR STATE ARTICULATION OF A PROGRAM IS TO BE ACHIEVED.

Rationale - Concept II: Articulation of vocational/occupational education programs resulting in the awarding of course credit at the post-secondary level for vocational course instruction successfully completed at the secondary level can only be accomplished by standardization of instructional basic content for occupational courses common to local area institutions at both levels of education. There is general agreement that this can be accomplished through the employment of standardized instructional objectives based upon the essential job tasks (competencies) considered necessary by the employers and experienced workers for job performance. The competencies were developed initially by performing a job analysis. Since the purpose of vocational/occupational education is to develop job qualified persons, it is only logical that to be job qualified, one must have the ability to perform the tasks required by the employers for the job.

CONCEPT III: STANDARDIZED PERFORMANCE STANDARDS FOR COMMON SUBJECT AREA JOB TASKS ARE REQUIRED FOR EFFECTIVE LOCAL AREA OR STATEWIDE ARTICULATION OF VOCATIONAL/OCCUPATIONAL EDUCATION PROGRAMS. THE PERFORMANCE STANDARDS TO BE USED ARE BASED UPON BUSINESS/ INDUSTRY INITIAL EMPLOYMENT PERFORMANCE REQUIREMENTS FOR THE JOB TASK CONCERNED.

Rationale - Concept III: To be realistically valid, performance standards must be based upon those of the business, industry or profession (the employers) concerned with the vocational/occupational education program, since the ultimate objective of such programs is to develop student employability which requires the ability to meet the employer's job task performance standards. It does not appear desirable, practical or realistic to have a variety of job task performance standards applied for the same tasks in the same school system, local area or region. Employers expect the same performance for the same task, job level, and pay in the same occupation. When only primary tasks and performance standards are considered, there can be found little significant difference in stated performance standards for the same task in the same occupation by employers across the State. V-TECS has verified the foregoing in multi-state surveys conducted to obtain such information. Many trades and industries have moved or are moving toward the establishment of national performance standards. Consideration of the foregoing makes it obvious that the standardization of instructional objectives, based upon recognized job tasks and the application of job task performance standards based upon employer requirements are the keys to subject matter articulation.

CONCEPT IV: ESTABLISHMENT OF JOINT COMMITTEES TO SERVE IN A DUAL OCCUPATIONAL ADVISORY AND PROGRAM DEVELOPMENT ROLE (BOTH AT THE LOCAL AREA AND AT STATE LEVELS), CONSISTING OF OCCUPATIONAL ADVISORS (CRAFT CONSULTANTS), HIGH SCHOOL VOCATIONAL TEACHERS, COMMUNITY COLLEGE/TECHNICAL INSTITUTE OCCUPATIONAL INSTRUCTORS AND A VOCATIONAL/OCCUPATIONAL EDUCATION SUPERVISOR OR CONSULTANT IS ESSENTIAL TO ARTICULATION OF SUBJECT MATTER. THERE SHOULD BE ONE SUCH COMMITTEE FOR EACH ARTICULATED PROGRAM PER LOCAL AREA, SERVING ALL SCHOOLS CONDUCTING THE PROGRAM IN THAT AREA AND ONE AT THE STATE LEVEL.

Rationale - Concept IV: Current thoughts prescribe that an advisory committee be established for each vocational/occupational education program conducted by each institution at both the secondary and post-secondary levels. As a rule such committees consist of only the craft advisors. The question arises when considering articulation: if several institutions in the same area articulate their program, whose committee would be the source of advisory guidance? (The area in this case is the "service area" of the community college/technical institute (CC/TI) serving the county or larger area of the high schools concerned.) One joint area advisory and program committee for a specific vocational/occupational education program, per post-secondary institution service area, appears to be a logical solution. Such a committee can result in better advisor service, program standardization and consistency, for the local area schools involved in the program than a number of committees.

Each advisory and program committee is to be designed to provide occupational advisory service to all local area secondary schools and the post-secondary institution in the area conducting instruction in the same vocational/occupational education program. Such committees are expected to include at the local area all high school vocational teachers and all CC/TI occupational instructors involved in the occupational program, as well as occupational advisors. This will do much to make articulation a working fact by providing a face-to-face communication vehicle for the teachers/instructors and advisors involved in the program. Such a procedure is used quite successfully in several other states and has been employed in the Duplin County Articulation Research Project where advisor availability to meet requirements for each institution is a problem at the local area. A key factor is that all teachers/instructors have input opportunity and can interact with the occupational advisors. As a result, the products of such committees are more acceptable to those with interest in the area concerned. (Special procedures are required when a large number of vocational teachers and occupational instructors are involved in the same articulated program in the same local area.)

If articulation is to be practiced laterally as well as vertically, for common programs of instruction (a practice already a matter of record), it will be necessary to develop a joint advisory and program committee at the State level with local area representative participation to coordinate and develop the programs and to prevent duplication of effort. Lateral articulation becomes necessary to accommodate students who must transfer between institutions at the same educational level and for those high school vocational students who come from counties that do not have a community college or technical institute within the county area and as a result elect to attend the nearest such institution to their home.

CONCEPT V: EVALUATION OF STUDENT PERFORMANCE, DETERMINATION AND RECOGNITION OF STUDENT JOB QUALIFICATION AND DETERMINATION OF THE CREDITS TO BE AWARDED THE HIGH SCHOOL STUDENT TOWARD ADVANCED STANDING AT THE POST-SECONDARY LEVEL IN ARTICULATED PROGRAMS IS BEST ACCOMPLISHED BY EMPLOYING THE FOLLOWING:

A. USING COMPETENCY BASED, STANDARDIZED, TEST ITEMS OR TEST ITEM OUTLINES FOR EACH COMPETENCY (WITH PERFORMANCE STANDARDS STATED) DEVELOPED BY THE ADVISORY AND PROGRAM COMMITTEE;

B. PROVIDING FOR JOINT TEST TEAMS TO ADMINISTER ANNUALLY A PORTION OF THE STUDENT JOB QUALIFICATION EVALUATION (CENTRALIZED WHERE POSSIBLE); AND

C. PROVIDING FOR FORMAL RECOGNITION OF STUDENT PROGRAM ATTAINMENTS IN APPROPRIATE, STANDARD, PERSONNEL MANAGEMENT TERMS AS TO JOB QUALIFICATION(S) ATTAINED, PLUS A RECORD OF POST-SECONDARY ADVANCED STATUS CREDITS EARNED FOR THE HIGH SCHOOL STUDENTS.

Rationale - Concept V: The evaluation procedures now employed in vocational/occupational education programs vary widely between individual teachers/instructors. Some form of evaluation procedure and test item standardization appears necessary to ensure that a student is job qualified by employer standards and that the high school student has also achieved the competencies for which advanced program credit is to be awarded by the local area post-secondary institution. The key to reasonable evaluation standardization is to develop valid and reliable test items that are competency based and related to one or more of the job tasks required in job performance. The performance standards for the test item should be those that must be met for job task qualification.

Test items should concentrate upon determining the student's task performance abilities and knowledge of related technical information. Type test items or test item outlines (test items that state test item subject and action only, requiring provision of specifics prior to use) should be developed by the teachers/instructors on local area or state program advisory and program committees. This type of test item informs the instructor as to how the student's performance can be evaluated with validity and reliability, but removes the problem of test item compromise. Repeated use is then possible of test item outlines, since there is no reason why a student should not know that job qualification will be determined by evaluation of student job-task performance competencies.

The evaluation process in a specific vocational/occupational program can be made even more reliable if an evaluation is administered annually at a central location by a joint testing team for all vocational/occupational courses completed, with all local area high schools and the local CC/TI participating. Such a procedure has the advantage of providing a check on adherence to instructional content and performance standards, reducing bias and resource problems, adding validity to evaluation and providing a means for quality control of vocational/occupational programs. If secondary students are evaluated as job qualified in one or more job duty areas, that are identified as courses of instruction at the community college/technical institute level, they are also considered to be qualified to be awarded course credit for those courses without further testing, if they enroll in the advanced phases of the program of instruction within certain time limits.

Recognition of job qualification in personnel management recognized terms gives the potential employer and the former student job qualification identification. Current diplomas and certificates in many cases contain only the information that the student completed a program of instruction, but gives little or no indication as to what the holder is capable of doing. Employers and supervisors prefer information stated in terms with which they are familiar.

EDUCATOR ACCEPTANCE OF ARTICULATION CONCEPTS:

The North Carolina study on articulation conducted during the period 1973-1976 by Carlyle P. Woelfer, independently of the Duplin County Articulation Project, was based upon a statewide, random sample survey of secondary and community college/technical institute vocational/occupational educators. Survey responses indicated that over 70% of the respondents to the survey accepted the concepts discussed in the preceding pages. Details of this survey are at Appendix F, Survey Results.

CLOSING STATEMENT:

Articulation of subject matter does not require specific instructional procedures. The primary purpose of articulation from the instructional standpoint is to provide guidance for the achievement of instructional content standardization for vocational/occupational courses of instruction that are common to different institutions at the same or different levels of education. With the standardization of instructional content comes the requirement to apply the same terminal performance standards for the same job task or competency which constitute the instructional objectives. Articulation does not prescribe how a subject should be taught, but it does apply the instructional sequencing policy for duty areas and tasks of moving from simple to complex wherever required prerequisites do not preclude such action.

SUMMARY:

Articulation of vocational/occupational education programs is not a complex procedure, once its concepts are accepted and the participants become used to the requirements for cooperation, coordination and communication. The concepts are in fact five logical steps which must be implemented to achieve articulation in all aspects to the benefit of the student, the program, the institutions involved and the community. Procedural implementation of the concepts follows in Part II of this guide.

PART II

IMPLEMENTING POLICIES AND PROCEDURES FOR ARTICULATION

INTRODUCTION

The policies and procedures that are presented in this portion of the guide have been developed to guide North Carolina local area participants and the State Department of Education Staffs in the articulation of vocational/occupational education programs. Local area participants are considered to be those persons, high schools, community colleges/technical institutes and local school systems that are or plan to be officially involved in the articulation effort. The policies and procedures as stated are based upon and implement the five concepts of articulation presented and discussed in Part I and apply equally to all concerned. Related policies and procedures are grouped with the concept to which they apply. Any policy or procedure requiring joint action should be implemented by joint agreement. Participants in formal articulation agreements should be considered as equals in articulation activities. Articulation of vocational/occupational programs requires continuing communication and avoidance of unilateral action that may impact on articulation. Either party to an articulation agreement should be free to suggest action deemed necessary for the success of the effort.

CONCEPT I: ARTICULATION SUPPORT AND ADMINISTRATION - JOINT POLICIES AND PROCEDURES ARE REQUIRED FOR SUCCESSFUL ARTICULATION OF VOCATIONAL/TECHNICAL EDUCATION PROGRAMS BETWEEN HIGH SCHOOLS AND THE COMMUNITY COLLEGES/TECHNICAL INSTITUTES. SUCH POLICIES AND PROCEDURES SHOULD BE ISSUED BY THE HIGHEST LEVEL OF EDUCATION COORDINATING THE PROGRAM. THEY MUST INCLUDE PROMOTION OF CONTINUING ACTIVITIES SUCH AS COMMUNICATION, JOINT PLANNING AND MUTUTAL SUPPORT OF ARTICULATION BY ALL CONCERNED.

A. IMPLEMENTATION OF CONCEPT I

1. Actions in Support of Articulation

a. The State Superintendent of Public Instruction, the State President of the Department of Community Colleges and local area administrators in both systems should show their support of vocational occupational education program articulation between the institutions and school systems under their supervision by the issuance of joint letters of support for articulation to appropriate lower level administrators and members of the Local and State educational staffs with occupational education interests. Prior to initiating program articulation action, the president of the local community college/technical institute (CC/TI) and the superintendent(s) of the local public school system(s) with the concurrence of their trustees and board of education should enter into a formal articulation agreement. This agreement should then be publicized so that all educational personnel involved are aware of its existence. (See Sample Appendix M.)

b. Occupational education staff and administrative personnel at local and state levels should set the example for articulation by the practice of close cooperation and planning of their programs and other related activities, plus utilizing joint-action proposals whenever appropriate.

c. Articulation briefings with the objectives of informing and gaining the support of local boards of education and boards of trustees for the practice of vocational/occupational education program articulation are an essential part of articulation efforts.

2. Area Vocational/Occupational Education Advisory Committees

a. This is an effort to involve local area business, industry and professional administrators and leaders in vocational/occupational education support in an advisory capacity.

b. A joint local area vocational/occupational education advisory committee has the responsibility to serve all area institutions participating in the area articulation effort. It is to serve as the local counterpart of the State Advisory Council on Vocational Education by providing general advisory services in the area for vocational/occupational education.

c. This committee is a local consolidation of the current general "Occupational Education Advisory Committees" required for each North Carolina school system and community college/technical institute.

d. The primary function of this committee is to voice overall area needs, trends and recommendations for occupationally qualified persons and programs required to support such needs as well as support for vocational/occupational education.

e. An effort should be made to obtain a representation of the business, industrial and professional activities leaders in the area so that the entire area is adequately represented and that all employers' needs can be recognized. Selection of potential committee members by their "Career Cluster of Occupations" identification has merit in ensuring that all n needs are addressed. (The career clusters are those 15 groupings of related occupations as recognized by the U.S. Office of Education.)

f. If possible, a certain number of those selected for this committee should also be serving as members of a local vocational/occupational education advisory and program committee for a specific program to ensure having a communication link with those important committees.

g. Individuals nominated for membership on the area general advisory committee should be invited to participate by a joint letter from the local area school system superintendent(s) and the president of the community college/technical institute serving the area. Those who accept membership should be appointed by the joint action of the local board(s) of education and board of trustees. Every effort should be made to publicize such appointments to give the committee status.

3. Local Area Articulation Coordinating Committee

Local area administrators at both levels of education should take joint action to establish a joint committee of vocational and occupational education supervisors and secondary school administrators. This committee has the responsibility for arranging for initial orientations for all participants, coordinating the day-to-day activities of articulated programs of instruction and dealing with the administrative problems inherent thereto. (See Appendix A.) (See Appendix N for sequence of articulation activities.)

4. Institutional Visitations By Teachers/Instructors and Students

Regular visits of CC/TI occupational program instructors to the local area high schools to visit with the vocational teacher(s) and to discuss their programs with interested secondary school students should be practiced. In turn, provision should be made for interested high school students to visit the local community college/technical institute with or without their teachers to observe the instructional activity in their area of interest and to ask questions. (For such visits, small manageable groups are more effective.)

5. Local Area Guidance Counselors and Articulation

a. Vocational/Occupational Program Knowledge - High school guidance counselors should be required to achieve adequate knowledge of and have available information of vocational/occupational programs conducted in their schools and the local CC/TI so that they can provide appropriate guidance, encouragement and assistance to those students who are interested in such programs. Guidance counselors can play a key role in successful articulation efforts. It is desirable that guidance counselors participate in the planning and administration of joint centralized testing phase activities for occupational evaluation. (See Appendix G.)

b. Working Relationships - High school and CC/TI guidance counselors should establish a close working relationship, meet together regularly and exchange information routinely.

c. Employment Information Exchange - The CC/TI guidance counselors in the local area should make an effort to keep current on job opportunities and occupational trends in the area and exchange this information with the secondary level guidance counselors.

As a part of the job information activities, it is also highly desirable that the CC/TI guidance counselors make an effort to keep a current listing of both secondary and post-secondary students who have attained occupational qualification through local area occupational education programs and are preparing to enter the job market. A practice that contributes to articulation that has proved to pay dividends to the institution as well as the students has been efforts by the CC/TI to provide information and placement services to their students. This is done through contacts with the occupational advisory and program committees, the local state employment security commission offices and the appropriate business and industry employment offices in the area.

Students who have entered vocational/occupational education programs as well as those with such interests should be given job market trends, needs and status information. In turn, the appropriate business and industrial activities in the area should be informed as to what the CC/TI and the high schools are doing in the vocational/occupational education programs in which they may have interest. Follow-up of students should be practiced as a matter of instructional interest to obtain feedback and to enhance future placement efforts. When potential students know that the institution will train and help them to find a job, their interests in attendance at the institution should be increased. As a community service and as part of articulation, this service should also be offered to high school graduates of vocational education programs. This service could also cause the high school students to come to the local area CC/TI for assistance and may result in their enrollment then or at a later date, when the advantages of advanced instruction become more apparent.

d. Secondary School Guidance Counselors Visit Local CC/TI - Local area secondary school guidance counselors should be provided an opportunity to visit all programs conducted at the local area CC/TI and receive a full briefing on their activities by the instructors concerned.

B. ADMINISTRATIVE POLICIES AND PROCEDURES RELATED TO ARTICULATION

1. Advanced Credit for Occupational Qualification

a. Appropriate quarter hour credit will be given by the local CC/TI for articulated program common course work satisfactorily completed at the high school level when a student makes application for advanced training and presents local area recognized evidence of occupational qualification for that course. He/she will then start at the appropriate level of instruction for which qualified without duplicating previous work. (Recommended procedures for determining the level of advanced instruction qualification are at Appendix G.) (See also Section F, Implementation of Concept V.)

b. Students who have completed articulated high school occupational programs and have demonstrated occupational qualification by locally agreed upon procedures (or as set forth in Appendix G) and apply for advanced instruction with valid certification at the local area CC/TI should receive priority enrollment consideration for occupational courses. Failure by the local CC/TI to make such allowances can negate articulation values. Students with advanced credit evidence should be enrolled without further testing in their occupational program unless the time limitations set for the recognition of advanced credit have expired. (High school vocational education teachers should make certain that their students are aware of B-1(a) and (b).)

c. During the interim period between initial implementation of an articulated occupational program at the secondary level and that time when all personnel leaving high school in that program have received all available secondary instruction based upon articulated instructional objectives guides, it should be the practice of the CC/TI instructors or registration personnel to ask recent high school graduates at registration what occupational education courses they have taken for which they would like to be challenge tested for advanced credit. Persons who have completed occupational education instruction in non-articulated programs should be identified and given challenge test information. (See Appendix L-1.) Test items used for challenge evaluation in an articulated program should be taken from the appropriate block of the instructional objectives guide for the program in question.

d. Challenge Testing Non-Articulated Programs - Consistent with the existing Department of Community Colleges policy, secondary school graduates of non-articulated vocational programs who seek enrollment in the same program at the CC/TI level may also be considered for advanced credit evaluation under the following conditions:

1) The student's grade average in the vocational education courses completed is B or better. (This serves as an indicator of potential for advanced credit.)

2) Student gives an affirmative response when questioned on enrollment as to interest in a challenge test for advanced standing credit in the occupational education program of concern.

3) The student's high school vocational education teacher recommends the student for advanced status evaluation.

4) Based upon the above, the student is tested and attains a grade of 80% or higher in a comprehensive, competency based test, developed by the local area CC/TI occupational education program instructor concerned. Such a

test should also be coordinated with the student's high school vocational education teacher as a courtesy in the spirit of articulation and to give the high school teachers an idea of what is expected of the students at the CC/TI level.

e. Credit for Work or Military Experience - Students who seek enrollment in an occupational education program at the CC/TI level and present no evidence of secondary vocational instruction should be asked if they have had prior work or military service experience in the occupation related to the program. If work experience is claimed, the individual should be shown the task listing(s) or instructional objectives for the initial occupational courses to determine if work experience is considered to have covered one or more blocks (courses) of instruction. If review is affirmative and experience substantiated, the student should be offered the opportunity to be tested to determine the level of occupational qualification and given appropriate course (block) completion credit if qualification is demonstrated. (See Appendix L-1.) Those with military service should have their service evaluated for course credit based upon the Guide to Evaluation of Educational Experience In The Armed Services, American Council for Education, Washington, D.C., 1976.

f. Skill Development Course Misuse - It is most undesirable to place high school students who lack interest or aptitude in a specific vocational skill development course or programs as a means of finding something for them to do or for career exploration purposes.

g. Limitations to Course Credit Hours Awarded In Articulated Programs - Where proficiency testing, as part of an articulated program, has been conducted and the student has been certified as occupationally qualified in the courses of instruction completed at the secondary level, there should be no limit as to the number of such courses (blocks of instruction) for which credit will be granted in the same program at the post-secondary level.

h. Recording Credit Hours Awarded For Articulated Courses - Where qualification is demonstrated by method previously discussed, course credit towards graduation or program completion should be recorded as credit by examination, but grades and quality points should not be awarded. Applicants who fail the proficiency test(s) for advanced credit in a specific block (course) will be required to repeat instruction in that course (block) of instruction to obtain credit.

i. Advanced Standing Proficiency Examination (Challenge Tests) Form - See Appendix L for a sample of a form appropriate for use in applications for advanced standing proficiency examinations (challenge examinations). It is desirable to have copies available together with course descriptions during enrollment at all enrollment stations with persons performing enrollment actions made familiar with their use. Copies should be on hand for use by the registrar, the guidance counselor and all department heads.

2. Preparation For Highly Technical Programs

For highly technical programs consideration should be given to providing information to the high schools that can serve to guide the student at that level as to the necessary academic and occupational prerequisites for enrollment, as a participant in a desired associate degree technology program conducted at the local area community college or technical institute. For articulated programs this information should be in the program instructional objectives guide.

3. Entrance and Enrollment Procedures (Post-Secondary)

As an essential component of articulation, this activity should be kept as simple as possible, while meeting necessary State policy directives on the subject. Multistate surveys showed that frustration with relatively complex or inconvenient administrative procedures related to entrance into community colleges or technical institutes have been found to cause some potential students to give up or not to try to enroll. Some post-secondary institutions have permitted guidance counselors and instructors to make tentative enrollments while visiting the high schools. This caused the student to feel committed and to go through with the enrollment. Program admission requirements should be well publicized and made especially well known to the guidance counselors and the vocational instructors of the area high schools. Remedial programs to overcome program deficiencies should also be well publicized. Interviews and counseling should be readily available for the new or potential students to preclude their turning away from advanced programs because they could not talk to anyone about the program of their interests. The faculty and other personnel involved with students, potential or enrolled should be made fully aware of entrance and enrollment procedures.

4. Teachers/Instructors Up-Date Training

To ensure that vocational/occupational program teachers/instructors have the opportunity and support for up-date training in their specific occupation and take advantage of same, arrangements should be made and publicized regarding "in service" education or training.

5. Maintenance of Skills Learned and Interest

Every effort should be made to preclude the loss of interest and perishable skills learned in a high school articulated program, when the student enters a CC/TI for advanced instruction, in that program. If possible, the student should be enrolled in at least one appropriate skill development course for which qualified in the initial quarter, or be provided some means of retaining the skills already acquired, ie: shorthand practice, etc.

6. Resource Sharing

As provided in the State Administrative Code, 1977 regarding articulation, consideration should be given by the local area schools to sharing essential scarce or expensive equipment, utilization of certain facilities and dual status of certain instructors between local area high schools and the area CC/TI. Funding for consumables and expendables would be the responsibility of the user. Joint efforts of this nature are a form of articulation and can lead to more economical and efficient use of existing resources, to the benefit of all students and the programs concerned. (Cost sharing of action proposed above will require implementing instructions from State level in many cases.)

7. Recognition of Job Qualification Below Program Objectives

Provisions should be made to recognize the job qualification achieved by those individual students who did not complete a program of instruction, but did complete satisfactorily enough blocks (courses) of the program so as to achieve a recognized job entry qualification at a level lower than the program objective. (See Appendices G and H.) If sequential competency instruction is practiced in vocational/occupational education programs, students will achieve a lower level job qualification at near midpoint in many programs with progressively higher levels accruing until the program objective is reached.

8. Accelerated Learning

Give consideration to authorizing credit to a student for course completion whenever the instructor states that the individual has met the competency requirements for the block or course. For example, the student who has completed required occupational course work prior to the end of scheduled instruction should be offered some reward or incentive such as (a) permitted to start work in the next block when possible; (b) given the opportunity for part-time employment in the program area if qualified; (c) provided with additional activities related to instruction in question to gain more experience; or (d) act as a tutor with students in the course needing help.

9. Individualized Instruction

Individualized instruction is most applicable to vocational/occupational education programs. Administrators can improve the management of articulated programs if they take steps to provide vocational/occupational education teachers/instructors with the necessary training and resources to conduct individualized instruction. For example, considerable writing time is required in preparing the necessary learning packets and many instructors will initially require professional help in preparing learning packets if this is not done for them. (Applies also to secondary teachers.)

10. Community Relations

Continuing efforts should be made to provide the local area employers and the public with information related to vocational/occupational education programs in the local high schools and CC/TI. Public relations and information play an important part in articulation activities. In addition to the "Open House" activities and "Career Days" commonly conducted by the individual institutions, an area type occupational trade fair sponsored jointly by both the secondary school system and the local CC/TI and conducted every two years, is recommended. Trade fairs can be conducted annually, however, the considerable effort and the costs that can be involved may make two-year intervals more desirable. Also, the two-year intervals will provide an opportunity for a new group of the target audience students to reach the age where they may have career decision interests. This time interval would give the local area high schools and the CC/TI an opportunity to conduct local activities at the school, such as "Open House".

A trade fair is a vehicle to inform the potential student, the public and the employers regarding the vocational/occupational education programs conducted in the area and the job qualifications developed by such programs. This type of trade fair groups the programs for display according to the program and career cluster with each school conducting that program presenting a display of student activity in the program and career cluster grouping--as opposed to school groupings. In addition, the career exploration programs conducted in the middle schools and junior high schools also present a display for each career cluster in conjunction with the secondary and post-secondary programs to show a sequence of instructional activities from career exploration to job qualification related to the occupational career cluster concerned. Business and industry exhibitors are sought to present a display of their activity and the types of jobs which they have that require previous training or experience. These are positioned so as to show the terminal objective of the career cluster.

CC/TI adjacent to the area sponsoring the fair were asked to participate and display advanced programs in career cluster areas not available in the area. The primary target audience for a trade fair is students in grades 6-10 and their parents. (See Appendix J for a suggested trade fair career cluster layout and further details regarding trade fair organization.)

CONCEPT II: STANDARDIZATION OF VOCATIONAL/OCCUPATIONAL EDUCATION PROGRAM COMMON OCCUPATIONAL SUBJECT MATTER, BASED UPON INDUSTRY VALIDATED JOB-TASK INVENTORIES WHICH SPECIFY THE COMPETENCIES REQUIRED FOR JOB QUALIFICATION, IS NECESSARY IF LOCAL AREA OR STATE ARTICULATION OF A PROGRAM IS TO BE ACHIEVED. (THIS APPLIES TO COURSES OF INSTRUCTION COMMON TO BOTH THE SECONDARY AND POST-SECONDARY LEVELS OF EDUCATION IN AN ARTICULATED OCCUPATIONAL EDUCATION PROGRAM OF INSTRUCTION.)

C. IMPLEMENTATION OF CONCEPT II

1. Method of Developing Task Inventories

A task is a function of a job, a job assignment regularly performed by the worker, ie: "Replace Spark Plugs" - a task for an automotive mechanic. Task inventories are lists of job tasks for specific jobs. They are developed by performing a job analysis--what does the worker do that is performance in nature and what must the worker know to be capable of performing. The instructional objective simply stated is "to provide instruction that will make the student capable of job task performance". Job analysis and task inventory validation are primary activities of the occupational advisors. (See Appendix B.)

2. Task Inventory Information Sources and Task Surveys - Job Analysis

a. Task Inventory Information Sources - Development of a task inventory by performing a job analysis is time consuming and requires training. Usually someone has developed a task inventory or list that can be used as a task survey. Such inventories may not be fully adequate or current for the area, but they are useful as a starting point for the advisors. It is easier to correct and bring a list up to date than to do a full job analysis. Task inventories are often available at: 1) The Education Information Center, State Dept. of Education, Raleigh, NC, through an ERIC search; 2) The Center for Vocational Education, Ohio State University; 3) U.S. Dept. of Labor, Washington, DC; 4) State Occupational Education Offices; and 5) many major industries that conduct skill development programs. Appendix B is a sample of a Job Analysis Survey made as discussed above.

b. Job Analysis - If prepared lists or task inventories are not available, then a job analysis is in order. Some firms will have job descriptions on hand in the personnel office that will help. See Appendix D for details on job analysis procedures. The format used in Appendix B is applicable.

3. The Instructional Objectives Guides

To ensure that standardized instructional content is presented by all program instructors for courses organic to an articulated vocational/occupational education program of instruction, a jointly prepared reference document, identified as an instructional objectives guide, is desirable. Such a guide also contains the task performance standards and other information needed by the instructors. These guides also can be most useful to administrators to serve as common program references and link the educational levels.

4. Organization and Format of An Instructional Objectives Guide

An instructional objectives guide should be organized and contain the following:

a. A program summary containing (see Appendix C):

1) A listing of the courses or blocks of instruction organic to the occupational content of the program of instruction;

2) An abstract of the instructional objective(s) of each block (duty area) or course of instruction together with the number of contact hours recommended for that block for both the high schools and CC/TI, if taught by both;

3) The Department of Community Colleges and the Department of Public Instruction vocational/occupational course numbers of those courses organic to the program and the block(s) of instruction with which identified;

4) A summary of the successive job skill qualifications which accrue from block completion as the student progresses through the program to the qualification acquired by the student upon successful completion of the total program;

5) A brief summary of the objectives of the high school portion of the program and the same for the CC/TI level which in most cases will be a 2-year program as well as showing objectives for abbreviated versions (1 Year) of the program;

6) A listing of the academic and nonvocational/occupational courses which must also be completed to graduate from the program at both levels of education; and

7) A listing of the members of the local area or state occupational advisory and program committee responsible for the development of the instructional objectives guide content.

b. Task Inventory Lists - This is a series of task lists or inventory of tasks according to complexity for each block of instruction. (See Appendix C-2 a,b&c.) The blocks (courses) of instruction should also be arranged in an ascending sequence of complexity or, where necessary, as a prerequisite for a subsequent block of instruction. Frequency of task performance and experience level of worker expected to perform the task are also shown. This information helps in determining what should be taught and the emphasis required. The nonskill producing, introductory-type blocks of instruction normally should be the initial blocks or courses presented. Subsequent blocks should be of the skill-producing type. (See Appendices B and D for development.)

c. The instructional block (duty area or course) guides follow the group of task listings. The skill-producing blocks provide specific job skills when completed. (See Appendix C-3.) (In some cases, a skill-producing block of instruction successfully completed will result in qualification to perform an identifiable job but at a lower level than the program objective job, ie: Qualify in the "Brake Block" as a Brake Technician, in the Automotive Mechanic Program, assuming the completion of prerequisites.)

d. Following the last block of instruction is a consolidated tool and equipment list, when such is appropriate. (See Appendix C-7.)

e. The last item in an instructional objectives guides is a sample of a "Student Vocational Skills Record" sheet which could be reproduced and used by the teacher/instructor to maintain a record of student progress and performance. (See Appendix C-8.) This record is a list of the required tasks for each block of vocational/occupational instruction in the program, with added provisions for performance evaluation.

5. Development of An Instructional Block (Course)

A block of an instructional objectives guide will normally address a primary job duty area recognized by the occupation. It consists of the following (also see Appendix C-3 for sample of block instructional guide):

a. A block summary page which contains information about the block such as (see Appendix C-3 a, b and c):

1) Program title and state program identification number for both Department of Public Instruction and Department of Community Colleges, where appropriate;

2) Course (Block) title and assigned block sequence number within the program;

3) Course description - The course numbers and descriptions used by both the Department of Public Instruction and the Department of Community Colleges are shown. (This is important since the information is used to identify the post-secondary level course(s) and the high school courses related to the block of instruction, simplifying the awarding of course credits.);

4) Instructional contact hours show both as allocated to the course for high schools and the CC/TI. High schools often allocate more time to a block (course) of instruction than may be provided at the post-secondary level. If the course is not taught at the secondary level, then "None" or "Not Taught" is shown;

5) Instructional objectives for the course or block of instruction;

6) Job qualification acquired by successful completion of the block of instruction is shown, if applicable;

7) Prerequisites are shown, if any;

8) Performance evaluation procedures are cited; and

9) Equipment listing for the block is referred to, if any.

b. Task (Competency) Instructional Pages - These are the basic instructional reference pages. They follow the summary page in a block of instruction. These are the primary reference pages for instructors. The task pages are placed in the same sequence of complexity assigned to the task listing. The first and second digits (preceding the decimal) are reserved for the block sequence number, while the two digits following the decimal normally will be the task number taken from the task list. The page number in the block is usually the same as that of the task number to which the instructional information pertains. The information found on the task instructional guide page is (see also Appendix C-4 a, b and c):

1) Block number and title;

2) Task sequence number and title;

3) Instructional Objective - The instructional objective is normally the task title preceded by an action verb denoting performance, ie: "How to", "Learn", etc. The identification number is the same as the task number;

4) Primary or Key Skills (Process Objectives - A list of the primary skills or process objectives which must be taught to achieve minimum acceptable task proficiency is provided to guide the instructors in achieving standardized instructional content. The instructor may also teach additional essential skills not listed, if appropriate. They should not teach less than those listed, if articulation is to be achieved and performance standards to be met. Skills are assigned sequence numbers by adding sequential decimal digits after the task sequence number. Skills normally should be taught in complexity sequence, as limited by prerequisite requirements (see Appendix C-4 a, b and c);

5) Related Technical Information - This is information the worker must know to be able to perform the task. The primary items or sources of related technical information are shown, with the recognition that there may be more that the instructor will add. Where specific technical, professional and manufacturers' manuals and guides are used, they should be cited;

6) Task Analysis - To determine the skills (process objectives) and the related technical information to be taught, a task analysis will be required. This can be performed as a rule by the teachers/instructors of the advisory and program committee, but it may be necessary for supervisors to conduct some instruction for such personnel on how to perform a task analysis (see Appendix D for a summary on task analysis procedures);

7) Suggested Instructional Time - This is the advisory and program committee teacher/instructor estimate of the average number of contact hours of instruction required to teach the average student how to perform the task or to learn the task requirements. The time allocation is an indication of complexity and importance of the task. This time is flexible and is for planning purposes. The objective is to provide instruction required for the student to acquire the competencies and to meet job task performance standards, for all primary tasks. If a student can learn and perform a task properly in less time, this should be permitted. If the student wishes to challenge a task or series of tasks by taking a competency based evaluation, this practice is recommended. The slow student, who is trying and shows promise, but learns at a slower pace, should not be required to repeat those tasks performed and standards satisfactorily met if the block is not completed in the quarter or semester but instead start at the point where left off.

8) Required Performance Standards - This is a statement of the minimum requirements of performance acceptable for task qualification, based upon the business/industry requirements. Note: The standards should include time limitations, volume, quality and other performance indicators such as accuracy requirements or error limits. If the appropriate standard(s) is found in a standards manual or other technical reference, notice should be made of that fact. The standards cited are the minimum acceptable for job qualification for initial employment. Reliance on teacher judgment alone is inadequate. Teachers may require or encourage and recognize greater quality of performance as a factor in course grades determination, where such grades are required. However, the program objective should be to provide the student with the ability to perform each task to meet minimum industry/business requirements for job-task qualification. (See Appendix C-4 a to c for instructional pages.)

9) Abbreviated Format, Instructional Blocks (Courses) - For courses of occupational education in an articulated program which may not have a secondary level counterpart, it may not be necessary to perform a task analysis for tasks organic to the course (block) or duty area, or to provide some of the other details shown for a Task (Competency) Instructional Page. (See Appendix C-4 a, b and c.) The primary area of concern in lateral articulation between community colleges/technical institutes is that course instructional content, objectives and required minimum performance standards are reasonably standardized. This can be done by developing a block (course) summary as provided in Appendix C-3 and Item C-6 above and a Task Listing with statements of minimum required performance

standards. If desired, instructors can use as examples any instructional objectives guide, which contains Task Instructional Pages or this Policies and Procedures Guide in performing task analyses and to develop such pages for their advanced courses. (See Appendix C-4 a, b and c.) A sample of the abbreviated format is at Appendix C-4(d). This procedure is not recommended for articulation of vocational/occupational courses between secondary and post-secondary levels of education.

c. Test Items (See Appendix C-5 a, b and c) - The test items for each block of instruction are prepared by teacher/instructor members of the Occupational Advisory and Program Committee during development of the instructional objectives guide. A test item is best developed at the conclusion of the task analysis to which it pertains. These performance test items should be competency based and directed at determining the ability of a student to meet the performance requirements and standards for a specific task (instructional objective). (See Item 9, p. iv, Appendix C.) These test items should be used by both secondary and post-secondary institutions that conduct instruction for the block of instruction concerned to achieve relatively standard evaluation procedures. Test items normally will be in outline form, leaving the problem details or the specifics to be added by the instructor prior to use of the test item. Desired test item performance standards should be shown with each item. The emphasis is upon application and required cognitive skills to perform the task.

d. Block Tool/Equipment List (See Appendices C-6 and C-7) - There is a list of tools and equipment prepared for each block of instruction, when appropriate. In certain programs, a consolidated tool/equipment list is also prepared. (See also Appendix C, p. iv.) Tool and equipment requirements should be determined during development of the instructional block.

6. Local Area Adjustments to Instructional Objectives Guides

The following applies to instructional objectives guides prepared at the State level:

a. The State Advisory and Program Committee developed job-task listings and job-task performance standards should be those common to certain jobs or a job level in the business/industry/profession in the state or region. If in a local area most employers have common job tasks or differences not provided for in the instructional objectives guide prepared by the State level committee that would affect the ability of the student to be locally job qualified, then adjustment of the program blocks is appropriate. Such adjustment is subject to majority agreement of the members of the local area advisory and program committee. This adjustment should be accomplished primarily by the addition of the local area unique essential tasks, rather than by deletion of state or industry recognized standard tasks. In this way the student will still be employable beyond the local area. If the course (block) is adjusted more than 15%-20% instructional content and time, it may be more appropriate to add a new course.

b. Time Adjustments - If local area advisors state a general valid need for competencies not included in a state guide, they should be added by all those local institutions concerned. The instructional time requirements for the additional instructional objectives can be provided in several ways, ie:

1) School administrators may allocate additional time to the occupational program, or

2) Necessary time requirements may be also met by reducing, but not eliminating, the instructional time allocated to certain instructional objectives which receive little applicatory emphasis in the local area concerned.

c. Adjustments such as discussed in the foregoing are not intended where a special course is required to prepare personnel under the "New Industries Program" or for major changes in task and skill requirements for local industries based upon locally developed new processes, etc. Such courses should be developed separately by the local committees for the special situation. Information as to changes accomplished in statewide programs by local committees for local peculiarities should be provided to the state committee.

7. Purpose of Instructional Objectives Guides

A detailed summary of the purpose of the instructional objectives guide should be placed in the program summary if the Policies and Procedures Guide is not available to all. (See p. iii, Appendix C.) A sample local joint letter supporting guide use is at Appendix E.

CONCEPT III: STANDARDIZED PERFORMANCE STANDARDS FOR COMMON SUBJECT AREA JOB TASKS ARE REQUIRED FOR EFFECTIVE LOCAL AREA OR STATEWIDE ARTICULATION OF VOCATIONAL/OCCUPATIONAL EDUCATION PROGRAMS. PERFORMANCE STANDARDS TO BE USED ARE BASED UPON BUSINESS/INDUSTRY INITIAL EMPLOYMENT PERFORMANCE REQUIREMENTS FOR THE JOB TASK CONCERNED.

D. IMPLEMENTATION OF CONCEPT III:

1. Statewide performance standards established for a specific job task in a vocational/occupational program of instruction must be based upon performance standards recognized by the business/industry/profession concerned. These standards should be the minimum requirements for job-task performance at initial employment.

2. Performance Standards Differences - No differences shall exist in the job-task performance standards applied when determining the qualification of a high school or CC/TI student's ability to meet initial employment level requirements to perform the same job task at the same job level. This applies to final evaluation standards.

3. Development of Performance Standards - When developing performance standards for recognized job tasks, it will be necessary to consult a number of resources such as state craft boards, industry standards manuals, manufacturer's specifications, civil service job standards, plus input from the occupational (craft) advisors of the advisory committee. From these informational resources a draft of the consensus of the performance standards to be applied to the job tasks can be prepared. This listing, together with the tasks to which they apply, should then be reviewed by the committee craft advisors or other experts in the field for technical accuracy and acceptability. (Much of the above can be accomplished by mail.) The performance standards developed must be identified with the tasks to which they apply.

4. Recording of Performance Standards - The task performance standards adopted as appropriate by program developers will be part of the standardized information provided to teachers/instructors conducting the program in the instructional objectives guide. (See Item C-6 (b)(8) (Required Performance Standards), page 22.)

5. Standardized Performance Standards References - The vocational teachers and occupational instructors who conduct the same block(s) or courses of instruction in an articulated program, at both the secondary and post-secondary levels, should be provided with the same essential technical references, rate books, standards manuals, manufacturer's specifications manuals, and catalogs to ensure that appropriate information and performance standards contained therein are available for use as needed.

CONCEPT IV: ESTABLISHMENT OF JOINT COMMITTEES TO SERVE IN A DUAL OCCUPATIONAL ADVISORY AND PROGRAM DEVELOPMENT ROLE (BOTH AT THE LOCAL AREA AND AT STATE LEVELS), CONSISTING OF OCCUPATIONAL ADVISORS (CRAFT CONSULTANTS) HIGH SCHOOL VOCATIONAL TEACHERS, COMMUNITY COLLEGE/TECHNICAL INSTITUTE OCCUPATIONAL EDUCATION INSTRUCTORS AND A VOCATIONAL/OCCUPATIONAL EDUCATION SUPERVISOR OR CONSULTANT IS ESSENTIAL TO ARTICULATION OF SUBJECT MATTER. THERE SHOULD BE ONE SUCH COMMITTEE FOR EACH ARTICULATED PROGRAM PER LOCAL AREA, SERVING ALL SCHOOLS CONDUCTING THE PROGRAM IN THAT AREA AND ONE AT THE STATE LEVEL.

E. IMPLEMENTATION OF CONCEPT IV

1. Schools Served By Occupational Advisory and Program Committees

One area occupational advisory and program committee will be organized to serve the advisory needs for all high schools in the same local area and the CC/TI serving the area for each articulated vocational/occupational education program common to the institutions concerned. There is no need for individual institutional occupational advisory committees, where programs have been articulated. If a high school does not conduct a program, it is not served by that program committee nor does it participate on the committee.

2. Local Area Occupational Advisory and Program Committee

The local area advisory and program committee for a specific vocational/occupational education program is the local activity responsible for articulating vocational/occupational course instructional content. Membership and organizational activities are discussed below:

a. All teachers and instructors conducting vocational/occupational instruction in the same occupational program from both levels of education, in all schools in the local area that conduct the articulated program are automatically members of the committee. When each participating school has two or more teachers/instructors for a given program with over six schools involved, it then may be desirable to consider limiting the size of the committee during working sessions by having each school group select one or two representatives to attend such meetings. The objective is to give all appropriate teachers/instructors participation opportunity in a committee large enough to do the job, without creating an unwieldy activity.

b. Occupational (Craft) Advisors - One or more occupational (craft) advisors to represent each school participating in the committee shall be nominated by the teachers/instructors from that school. In addition, one at-large advisor (more if the number of high schools is limited) could be nominated by the CC/TI in conjunction with the vocational/occupational education supervisor on the committee and other interested local occupational education supervisors. Advisors should be qualified at the highest level in the occupation and should be a cross-section of the most respected and knowledgeable master craftsmen and supervisors in the occupation. They should be interested in the program and able to serve. A recent graduate of the vocational/occupational education program is also desirable as an advisor. On occasions, it may be necessary to go to surrounding areas to find enough qualified and willing advisors, if they are not available locally. Such personnel can participate by telephone and mail if necessary.

c. Executive Secretary, Occupational Advisory and Program Committee - One vocational/occupational education supervisor from either the local school system(s) or the CC/TI can participate on the committee. This individual would be appointed by joint agreement of the Articulation Advisory Committee (established in Item A-3, p. 11, see also Item 1, Appendix A) and assume the position of committee executive secretary. The executive secretary is expected to organize the required committee and be prepared to provide administrative and logistical support to the committee and when appropriate, with committee agreement, act for the committee. See Appendix K for details of functions of the executive secretary and committee operations.

d. To add prestige and to stress advisor importance, when the occupational advisors are identified, the president of the post-secondary institution and the superintendent(s) of the local school system(s) should jointly invite the candidate occupational advisors to be members of the local advisory and program committee. Those who accept should receive "official" letters of appointment signed by both the chairman of the local board(s) of education and board of trustees. Local publicity should be given to such appointments and institutional catalogs should list committee members.

3. Purpose of Local Area Occupational Advisory and Program Committee

The local area occupational advisory and program committee serves several purposes. The committee is expected to:

a. Nominate selected members to serve as representatives on regional or the state occupational advisory and program committee;

b. Provide a forum for teachers and instructors to discuss their program with each other and the local area advisors and to determine if there are local area peculiar competencies not met by state instructional objectives guides.

c. Review draft proposals for program instructional objectives guide and submit recommendations to the state committee.

d. Develop and submit proposed changes to the existing instructional objectives guide for their program.

e. Conduct local area surveys regarding program requirements.

f. Prepare the required test items for centralized testing, using the program outline test items contained in the instructional objectives guide.

g. Plan and conduct the joint centralized testing phase for evaluation of student occupational qualification.

h. Recommend technical upgrading instruction for program vocational/occupational teachers/instructors when appropriate.

i. Provide technical resource and instructional assistance to program teachers/instructors as required and where feasible.

j. Arrange for certificates and certify the occupational qualification of program students.

k. Assist in the identifying and obtaining required instructional aids through normal educational channels and by donations from business and industry.

4. The State Occupational Advisory and Program Committee

a. At the state level, the occupational advisory and program committee for an occupational program conducted statewide in the community college system and local school systems should have at least one high school vocational teacher and one CC/TI occupational program instructor. These are selected from among the appropriate vocational/occupational education program local area committees in each of the eight educational districts in which conducted. (See Appendix K for detail on advisory and program committees.)

b. In addition, there should be at least one occupational advisor, who is also a local committee member, from each district on the state committee.

c. Nomination of Advisors for State Occupational Advisory and Program Committee - The members of local committees selected for the state committee in their program should be nominated initially by their local committee to a state joint committee charged with the responsibility of selecting that committee. Persons so selected should be invited to participate by joint letter signed by both State President of the Department of Community Colleges and the State Superintendent of Public Instruction or appropriate senior representatives. Once the committee membership is determined, the official appointments should be made by the State Board of Education.

d. Executive Secretary, State Occupational Advisory and Program Committee - A state level staff member involved in vocational/occupational education from either education system should be designated by joint agreement as the executive secretary of a specific state occupational advisory and program committee. The functions of the state executive secretary would be essentially the same as the local area secretary. This would include arranging for the publication of material developed by the committee, following necessary review, editing and coordination. (See Appendix K for details on state program committee executive secretary.) If possible, the state committee should have joint staff representation. The second state staff member could assist the executive secretary, coordinate program activities for the staff, act as executive secretary when required and provide necessary liaison.

5. Purpose of State Occupational Advisory and Program Committee

The primary purpose of a state occupational advisory and program committee is to develop the instructional objectives guide for the program, discuss the proposed changes following local committee review and recommendations and finalize the document for authentication by the State Department of Public Instruction and State Department of Community Colleges. Once the state program instructional objectives guide is published, the committee will then have the responsibility for keeping the program up to date and for initiating action for the conduct of joint-state vocational/occupational program teacher/instructor conferences.

6. Occupational Advisor Functions

Occupational advisor functions should involve primarily:

a. Stating known changes and needs in business or industry that will have impact upon the vocational/occupational program of concern.

b. Helping to perform a job analysis if one is required. (See Appendices B, C-2 and D.)

c. Voting on acceptance or rejection of proposed tasks and performance standards for program, during job analysis.

d. Making comments and recommendations regarding changes to occupational tasks, skills, related technical information and standards.

e. Serving as a communication link with occupational activities and community concerned, and publicizing program activity.

7. Scheduling of Occupational Advisory and Program Committee Meetings

Committee meetings should be scheduled at times convenient for the most members. This will usually be best determined by discussion with the committee members. For either local or state committee meetings, adequate advance warning with follow-up is essential. Items to be reviewed by the committee members and agendas should be provided to them in advance. Consideration should be given to the following:

a. Local Committee Meetings - Meetings involving local occupational advisors/teachers/instructors generally will be best conducted in the evening to obtain maximum advisor attendance. Where vocational/occupational teachers/instructors only are concerned, a jointly agreed upon school day afternoon, usually a mid-week, has been found to be most productive.

b. State Committee Meetings - Meetings of more than one day, which involve program development or review, may be best conducted after the termination of the secondary schools' spring semester. This frees the secondary teachers to give full attention to the meetings and makes use of experiences gained in programs during the school year. Funds will normally be required to pay the secondary teachers for attending such meetings in addition to travel and per diem.

Ample advance notice must be given to permit all involved to plan for and prepare for such meetings, especially since many secondary occupational teachers take summer employment.

CONCEPT V: THE EVALUATION OF STUDENT PERFORMANCE, DETERMINATION AND RECOGNITION OF STUDENT JOB QUALIFICATION AND DETERMINATION OF THE CREDITS TO BE AWARDED THE HIGH SCHOOL STUDENT TOWARD ADVANCED STANDING AT THE POST-SECONDARY LEVEL IN ARTICULATED PROGRAMS IS BEST ACCOMPLISHED BY EMPLOYING THE FOLLOWING:

A. USING COMPETENCY BASED, STANDARDIZED, TEST ITEMS OR TEST ITEM OUTLINES FOR EACH COMPETENCY (WITH PERFORMANCE STANDARDS STATED) DEVELOPED BY THE ADVISORY AND PROGRAM COMMITTEE;

B. PROVIDING FOR JOINT TEST TEAMS TO ADMINISTER ANNUALLY A PORTION OF STUDENT JOB QUALIFICATION EVALUATION (CENTRALIZED WHERE POSSIBLE); AND

C. PROVIDING FOR FORMAL RECOGNITION OF STUDENT PROGRAM ATTAINMENTS IN APPROPRIATE, STANDARD, PERSONNEL MANAGEMENT TERMS AS TO JOB QUALIFICATION(S), PLUS A RECORD OF POST-SECONDARY ADVANCED STATUS CREDITS EARNED FOR THE HIGH SCHOOL STUDENTS.

F. IMPLEMENTATION OF CONCEPT V

1. Development of Test Items

The occupational advisory and program committee charged with the development of an instructional objectives guide (normally the state level committee) should prepare at least one competency based test item (preferably a test item outline) for each task. The purpose of the test item is to evaluate the ability of the student to perform the task and meet the required performance standards. The individual instructor or a test team can use these test items by selecting appropriate items and for the outline type add the details required to evaluate student performance. These test items constitute a test bank and are not considered to be a standardized test since each outline test item's specifics will vary with the teacher/instructor and will seldom be used at the same time. They can be used individually or in groups, as needed. The purpose of the standardized test items or test item outlines is to ensure that all students in the same occupational program are required to meet approximately the same evaluation requirements. As each test item or test item outline is prepared, the committee should also indicate the appropriate performance standards to be met. These test items should be used in the evaluation of occupational qualification in addition to determining student progress during the instructional period.

2. Joint Centralized Testing Activity

All high school vocational students with an interest in employment in the occupation for which trained, or having plans to attend the local CC/TI for advanced instruction in the same program should be provided relatively equal opportunities to demonstrate occupational qualification. In order to provide such opportunity and to improve the administration of performance type test items, with a concurrent reduction in chance for any bias, a phase of occupational evaluation should be conducted on at least an annual basis at a jointly administered centralized testing facility. Where possible, this phase of testing should be conducted at the local area post-secondary institution so as to take advantage of equipment resources and to familiarize high school students with the institution.

Coordinated by the program committee executive secretary, an evaluation team of secondary and post-secondary instructors should prepare for and administer the centralized evaluation as a joint effort, using the test items from the test bank. This procedure has several advantages for the student and also provides a means for the secondary school system vocational education supervisor to determine weaknesses and strengths in the vocational programs, as well as to help ensure that teachers/instructors are applying the same performance standards.

Owing to time restraints, only key tasks in each block or course of vocational/occupational instruction completed during the year can be centrally tested. As a result, central evaluation should be applied as a portion (approximately 40%) of the total evaluation input in determination of the student's occupational qualification for each block of instruction. The home school teacher provides the balance of the block evaluation. (See Appendix G for procedural details.) (See Appendix G-2, Testing Rationale.)

3. Job Qualification Certificates

To provide students with evidence of job qualification in terms meaningful to the employer, they should be issued a certificate of occupational qualification. At the high school level this would be in addition to the conventional diploma. This certificate should state the job qualification(s) in terms used by the business or industry concerned, or as contained in the Dictionary of Occupation Titles. The certificate should be signed by the home school instructor(s) and the evaluation team and be authenticated by the committee executive secretary on behalf of the advisory and program committee. On the reverse side of the certificate should be recorded the courses for which high school graduates will receive credit if they enroll in the post-secondary phase of the program. (See Appendix H for sample of certificate discussed above.) (Since the certificates are issued only to those who are job qualified at some recognized job level, the certificates meet with favor by the employers and they are sought after by the students.) The procedure will simplify registration at the CC/TI level. It is not intended that the certificates be used solely to denote course or block grades - rather its purpose is to denote student job qualification and courses for which credit should be awarded by the community college/technical institute concerned; grades of course may be shown.

4. Occupational Task Performance Record Cards

As an adjunct to the certificate of qualification discussed in Item D-3, it is also desirable to provide the student with a list of occupational tasks in which instructed. This can be taken from the task inventories in the instructional objectives guide or the student vocational skills record maintained by the teacher/instructor and based upon the format shown at Appendix C-8. A useful method of making available such information is to provide the student with a copy of the Occupational Task Performance Records Cards. These cards fold into wallet size and are printed on heavy paper. They contain essentially the same information as that found in the student vocational skills record. The student has a listing on this card of the tasks that must be mastered in the program of instruction and the sequence of such instruction. The card also permits recording of student progress. The instructor may also maintain a copy of the card, as a handy daily record of student progress. If desired, the teacher/instructor's copies of the cards are authenticated and given to the students when they leave school to seek employment or to enroll in advanced instruction. This provides the students with a complete record of their task performance that can be shown to the employer in addition to the certificate of job qualification. (See Appendix I for a sample of the format of an Occupational Task Performance Record.)

5. Policy For Students Who Fail Centralized Testing

A student who participates in the centralized testing phase of occupational evaluation and fails to meet job qualification performance standards for all blocks (courses) completed, will be recognized as job qualified to perform only those blocks in which the minimum job qualification standards were met (total evaluation score of 80%). (See Appendix G.) If, despite one or more failures, students are evaluated in enough blocks or courses to receive recognition of a job qualification at a recognized job level below the program objective, they should receive a job certificate stating such qualification(s). (See Appendix H.) Those who fail to receive a job certification for any level job should be given a letter showing what blocks or courses were completed and the advanced credits they may have earned. (See Appendix H-2.) CC/TI course credit will not be awarded for those courses in which job qualification was not demonstrated. Should such students enroll in the local CC/TI in the same occupational program, they may present evidence of block (course) completion and request retesting in those blocks in which not certified, or enroll in the course and repeat the instruction for those tasks in which they failed to meet required performance standards. Retesting is appropriate only if the instructor sees merit to such action. Since the student has completed much of the course work, an opportunity for early course completion may be appropriate. On entry, the student will be given full credit for certified occupational courses (blocks) and be enrolled with advanced status to level at which certified or awarded credit(s).

6. Policy for Secondary Students Who Complete Articulated Courses (Blocks) and Do Not Participate in Centralized Testing

To reduce the testing load, those students who are enrolled in an articulated course in high school, but have no plans for employment or advanced instruction in the occupational program normally should not be required to take the centralized testing phase of evaluation. Therefore, they would not be certified as job qualified by the advisory and program committee. Should such a person receive a passing grade for high school vocational course work and later apply for advanced instruction in the program at the local post-secondary institution, they should be permitted to use the course grade as part of the support for a request to challenge and be tested for advanced status and course credit. If such students elect not to be tested, they should then be required to enroll in the course. Owing to frequent reluctance to be tested, good vocational students with no specific plans following graduation should urged to be tested to obtain a job qualification certificate as something to fall back upon.

7. Alternate Solutions For Centralized Testing

When the number of students to be evaluated under the centralized joint testing activity procedure exceeds facility capacity or distances preclude such action, several solutions are possible:

a. Conduct testing on several different days, utilizing different high school teachers each time, or

b. Conduct testing at two or more central testing facilities and test all students at other than their home school, or

c. Organize a joint-test team(s) of teachers/instructors to administer tests at other than their home school, with students remaining at respective schools.

8. Advanced Course Credit Based Upon High School Teacher Evaluation Only

In some instances the communication between high school vocational teachers and CC/TI occupational education instructors in a local area may be of the highest order. There may be no question as to full compliance with the instructional content and performance standards set forth in the instructional objectives guide at both levels of instruction. The CC/TI occupational education administrators and instructors may elect under such circumstances to forego centralized testing and award credits for courses successfully completed, if high school students are certified as job qualified by their home school and continue to show a high degree of proficiency in advanced occupational program work. Note, there are disadvantages to this course of action - (a) precludes application of quality control in the secondary system, (b) causes the CC/TI to lose a recruiting benefit, (c) removes the advisory and program committee from certifying job qualification and (d) deprives the student from the experience of demonstrating job qualification away from the home school.

APPENDICES

Appendix A - Joint Administrative Committees

Appendix B - Job Analysis - Task Survey

Appendix C - Format and Contents, Instructional Objectives Guides

Appendix D - Task Analysis Procedures

Appendix E - Use of Instructional Objectives Guides

Appendix F - Educator Responses to Survey Regarding Articulation Concepts

Appendix G - Occupational Qualification Evaluation (Centralized Testing)

Appendix H - Certificate of Occupational Qualification

Appendix I - Occupational Task Performance Record Card

Appendix J - Occupational Trade Fairs

Appendix K - Local Area and State Advisory and Program Committees

Appendix L - Request for Advanced Standing Proficiency Examination (Non-Articulated Programs)

Appendix M - Joint Articulation Agreements

Appendix N - Recommended Sequence for Initiating Curriculum Articulation Activities in Local Areas of North Carolina

JOINT ADMINISTRATIVE COMMITTEES

1. Articulation Coordinating Committee (Local Area)

This committee is expected to establish and maintain communication between the local area school system(s) and the community college/technical institute that have entered or plan to enter into an articulation agreement to make articulation work. It is primarily a planning and coordinating unit, but it is also used to ensure that articulation of the vocational/occupational education programs, to include agreements, policies, procedures and requirements are known and supported. The committee should be alert to problems and deficiencies which may arise and take prompt action toward their resolution. The committee is especially important in the initial phases of articulation to ensure that required committees and other actions to include workshops, orientations and publications are provided for and that all involved are fully familiar with their articulation responsibilities and carry them out. (See Appendix N for sequence of articulation activities.)

The committee membership consists primarily of supervisory personnel, such as the secondary level vocational education director(s), the assistant superintendent for secondary education (or equivalent), the community college/technical institute dean of instruction (or equivalent), director of vocational or occupational education, educational development officer or assistant dean of instruction and one or more representatives of the high school administrators. It may also be appropriate to have the post-secondary admissions officer and a representative of the area guidance counselors' committee as part of the membership. On occasions it may be also desirable to request that a representative from the local board(s) of education and the board of trustees participate in the meetings of this committee for informational purposes.

2. Institutional Admissions Committee (Local Area)

This committee is designed to provide a communications link between the local area high schools and the community college or technical institute on matters pertaining to admissions requirements, changes, problem areas and admissions procedures. The committee should meet at least annually to ensure that the secondary education personnel are kept current. This committee should consist of selected members of the local community college/technical institute faculty (both academic and occupational), department heads, admissions personnel, student services personnel and persons from the secondary level institutions and systems with related identifications.

NOTE: Where more than one community college/technical institute have entered into articulation agreements with the same secondary school system(s), the committees discussed above should have representation from all such institutions concerned to ensure that lateral articulation is achieved and maintained. A committee as proposed in Item 1, also should be established at the State level to coordinate articulation actions.

APPENDIX A

JOB ANALYSIS SURVEY TO DETERMINE OCCUPATIONALLY RECOGNIZED TITLES FOR MAJOR BLOCKS OR DIVISIONS (DUTY AREAS) OF AN OCCUPATION AND THE PROJECTS (MODULES), WORK ASSIGNMENTS OR TASKS COMMON OR ROUTINE TO THE BLOCKS

This is a job analysis survey. Its purpose is to determine first the various divisions or duty areas of activity peculiar to the highest skill level job(s) in a specific occupational area, such as: Brake Repair for a General Automotive Mechanic in Automotive Maintenance & Repair or Typing for an Executive Secretary in Business and Office Occupations. Once the activity areas are determined, you then determine what tasks or work assignments are normally required in performance of the duty or major activity area, such as "Bleed Brakes" in Brake Repair or "Prepare Manuscripts" in Typing. Occupational advisors are considered to be the most valid source of this information. As used here, project and task have the same meaning.

Attached is a copy of a draft task inventory or listing which contains the tasks or worker job competencies considered as commonly required in performance of the subject job. These tasks have been grouped according to the activity or duty area to which they are most closely or most frequently related. This inventory was taken from recent occupational publications. Advisors are requested to review the task inventory to ensure that task groupings and tasks listed in the group are both accurate and current with occupational requirements. Titles should be those most commonly used and the list should be as complete as possible as it pertains to primary or essential tasks. Since the task inventory will be used to develop or update an occupational program of instruction, tasks and duty areas shown should be those known to be required for at least two or three years into the future. Items being phased out are not valid. The right hand side of each page of the inventory provides space in which to show changes you consider needed for an accurate, valid list. You should reflect requirements that satisfy both local and regional needs. We use the term "complexity" to describe duty areas and tasks that have many activities in their performance which the worker must know and/or do. A "simple" task has few components. A "complex" task will have many components or actions for completion.

The first page of the inventory shows the proposed duty areas or task groupings common to the occupation.

Should you recommend consolidation, addition, or deletion of any of the blocks/divisions shown, you should feel free to make such changes. We are most interested in what are the most widely recognized major divisions of the occupation, their titles, and the order of complexity. The least complex being number 1, followed in progression to the most complex. Place the numbers in front of the titles, in the space provided.

APPENDIX B

The second and succeeding pages of the survey show the blocks/divisions in subdivisions, work assignments, projects or tasks common, or routine to the occupational division or block. In the left hand column, identified as No. "1", are listed subdivisions or projects of work titled as could be determined from information available to instructors. Please rank order the projects again according to their complexity, with the least complex number 1 progressively numbering to the most complex, the highest number. In Column IV you may enter titles for the subdivisions or projects which you consider misnamed or titled; or list those to delete, add or consolidate. Be as current and accurate as your knowledge of the occupation permits. The intent is to use titles, terms, etc., recognized as common or standard for the occupation, by industry or business.

In Column II give your opinion as to the frequency that the average worker will be required to perform the project or work assignment, by checking "seldom", "weekly", "daily", or "more often". This establishes the priority and importance to be attached to teaching the student how to perform the project.

In Column III identify the workers' skill or competency levels expected to be able to do all of the work involved in the work assignment or project. The question is, "Must the new worker know how to do operations involved?" Column III gives an idea as to what experience and skill level of worker that will normally do the job. If a worker at lower skill levels would do only part of the job/project such as "remove a part", "serve as a helper", or "type rough drafts," leaving the finished job to more skilled, make a note to that effect. Tasks which only the most skilled and very experienced workers will be expected to perform may not always be appropriate in this course of instruction which qualifies the individual to initial employment at the job level concerned. However, if the worker must have the basic skills for the task to be capable of performing other activities at job entry level or soon thereafter, so indicate. Tasks which are best learned on the job should be identified where appropriate.

OCCUPATIONAL DUTY AREAS, DIVISIONS OR BLOCKS OF THE OCCUPATION

OCCUPATION: Automotive Mechanic

Common Titles used to Identify the Duty Areas, Blocks or Divisions of the Occupation. Place Number in space to show least complex (1) then in order to most complex.	Title You or Your Business/Industry Recognize for the Listed Block/Division if Title Shown is Not Acceptable.
1 Lubrication and Vehicle Operating Maintenance	
2 Cooling System Maintenance and Repair	
3 Automobile Heater Maintenance and Repair	
8 Standard and Power Steering Unit Maintenance and Repair	
6 Power Train Maintenance and Repair	Drive Line and Rear End Repair
10 Automatic Transmissions Maintenance and Repair	
7 Braking System Maintenance and Repair	
4 Fuel System Maintenance and Repair	
9 Front End Maintenance and Repair	
11 Automobile Air Conditioner Maintenance and Repair	Heating and Air Conditioner Repair
5 Engine Overhaul	
12 Electrical Systems Maintenance and Repair	

(NOTE: The numbers shown in column I of Appendix B-1a and B-1b are samples of advisor entries. Advisor receives blank form.)

APPENDIX B-1a

DUTY AREA, DIVISION OR BLOCK TITLE: Standard and Power Steering Unit Maintenance and Repair

TASKS, SUB-DIVISIONS, PROJECTS OR WORK ASSIGNMENTS COMMON OR
ROUTINE TO THE DUTY AREA, BLOCK OR DIVISION OF OCCUPATION

APPENDIX B-1b

(I) Common Title of Task, Sub-Division, Work Assignment or Project. Number in Order of Least Complex as Number 1 to the Most Complex.	(II) Frequency That Average Worker Will Be Required to Perform the Task, Project or Sub-Division.				(III) Level of Complexity; Normally Performed By Skill Level or Levels Checked.			(IV) Title Normally Used By Your Industry/Business for the Task, Sub-Division, Project or Work Assignment, if You Disagree With That Shown. Also Make Deletions, Combinations, or Additions to Column I if Appropriate.
	SELDOM	WEEKLY	DAILY	MORE OFTEN	LOWEST	INTER-MEDIATE	HIGHEST	
8 Standard and Power Steering Unit Maintenance and Repair							X	
3 Adjust worm and sector in steering box			X		X			
7 Inspect and replace steering spindles			X			X		
8 Inspect steering			X			X		
1 Lubricate the power steering			X		X			
2 Lubricate the steering box and linkage			X		X			
12 Rebuild power steering cylinder			X				X	
9 Repair or replace manual steering components			X			X		
10 Repair or replace power steering components			X				X	

DEVELOPING A COMMITTEE COORDINATED JOB ANALYSIS FROM INDIVIDUAL ADVISOR RESPONSES

The following is a suggested method for utilizing the responses received from various persons as input for the Job Analysis Opinion Surveys, in an effort to achieve an agreed upon listing of occupational blocks or divisions in a standardized order, as well as titles. This would be followed by a like effort to determine the tasks considered to be a normal worker function for each of the duty areas, major blocks or divisions of the occupation.

1. Call a meeting of the advisory and program committee and discuss the occupational duty areas, major blocks or divisions, based upon survey responses, and reach an agreement with the full committee on the duty areas and titles that appear to be most acceptable, listed in order of complexity.

2. Following the establishment of an agreed upon order of the major blocks or divisions of the occupation, identify the tasks organic to each block and list in sequence order of complexity or as required for job performance. Use the titles that appear most acceptable. The tasks should be identified as what the worker is expected to do, not how. These are usually stated as action requirements, such as draw, repair, adjust, audit, balance, make, record, etc. At the same time the frequency of the task and the skill or competency level should be identified with the task. The responses on the opinion surveys and the comments of the advisors present should be considered. (Complexity here means number of parts or actions required in duty area or task performance.) Appoint an individual to record agreed upon master listings.

3. Ruled sheets or blank survey type forms should be used to record the task list information developed. These task listings become the task inventory and will then be used to develop the skills or competencies (the operations) that the learner must acquire to be able to perform the task, by the process of task analysis for each task. See Appendix C-2a(1)(2)(3).

4. If there are common tasks or requirements to be found in all blocks, they can be identified as the basic element or the base block and possibly taught early to avoid unnecessary repetition. In determining the sequence of instruction, there may be certain ones must be completed first before others can be performed. In some occupations, there may be no such element, in others it may be obvious.

5. During the process discussed in "2" above, if sufficient advisors are present, it may be desirable to break up the larger committees into sub-groups after the titles of the major activity blocks and the sequences are determined, and basic blocks are determined. These sub-groups could be used to develop the program

APPENDIX B-2

task listings that are peculiar to each division for the occupations that have a large number of divisions and tasks, such as automotive and business education. After sub-groups have completed their portion of the blocks or divisions, time permitting, they could read whatever had been developed, to get full committee reaction. Another approach is to do as much as possible and complete the rest at the next advisors' meeting. It is essential that enough be accomplished during the meetings with craft advisors so that vocational/occupational teachers/instructors will have a sufficient amount of the occupational task inventory upon which to perform a task analysis. Task analyses can be performed without the advisors present at a time more convenient to the teachers/instructors.

A STATE ARTICULATED INSTRUCTIONAL OBJECTIVES GUIDE

FOR

OCCUPATIONAL EDUCATION PROGRAMS

PROGRAM

EXECUTIVE SECRETARY (DCC T-030)
AND
BUSINESS AND OFFICE EDUCATION (HIGH SCHOOL)

(A PILOT MODEL)

AUGUST 1977

PREPARED BY

ARTICULATION OF OCCUPATIONAL EDUCATION PROGRAMS
BETWEEN SECONDARY SCHOOLS AND TECHNICAL INSTITUTES/
COMMUNITY COLLEGES PROJECT
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APPENDIX C

FOREWORD

This articulated instructional objectives guide is designed for use as a reference in the articulation of vocational education programs at the high school level with occupational education programs at the community college/technical institute level and to foster competency based instruction and evaluation. It is intended primarily for use by instructors at the post-secondary level and teachers at the secondary level conducting like courses in the same occupational program. The guide considers commonalities in like occupational courses between high school and CC/TI (community colleges/technical institutes) programs in the same occupation and implements three basic concepts.

The commonality exists by virtue of the requirement by law that North Carolina community colleges and technical institutes conduct "Open Door" instruction to include occupational programs. Obviously, such instruction must start from the beginning of the total occupational program, often resulting in duplication of instruction conducted in high school. This fact created the requirement for articulation which, if properly conducted, removes the need for the post-secondary student to repeat occupational instruction successfully completed at the secondary level. Such students usually require only the more advanced occupational instruction not received in their high school.

The three basic concepts involved in occupational program articulation between secondary and post-secondary levels of education are:

1. To ensure that vocational education instruction conducted at the high school level is transferable for credit to the CC/TI in the same occupational program, it is essential that the vocational/occupational education instruction components (courses) content be standardized so as to be identifiable with one or more like components at the CC/TI level.

2. To ensure that the student has acquired sufficient skill in job-task performance to be given post-secondary credit for high school work, the teachers and instructors must both use the same task performance standards.

3. To ensure that student occupational qualification recognized for employment or course credit is both both valid and reliable, it is necessary to standardize test items and procedures in the evaluation of student job-task performance.

Instructional content standardization is based upon job tasks considered necessary for job qualification by the employers. The performance standards standardization is achieved by basing them on the performance standards required by the industry/business/profession for initial job entry qualification. The ability to perform job tasks and meet initial job entry task performance standards recognized and accepted by employers must take precedence over personal opinions regarding standards or articulation cannot be readily accomplished. Test items and evaluation procedures for the same job task should be developed jointly by the instructors and teachers concerned.

ARTICULATION RESEARCH PROJECT
SIGNATORIES TO LOCAL AREA OCCUPATIONAL EDUCATION CURRICULUM ARTICULATION AGREEMENTS

The following listed local area public school system and community college/technical institute administrators have agreed to articulate their Secretarial Science - Business Education Program of instruction. Such agreements involve the employment of this document as an instructional objectives guide. High school students who successfully complete recognized articulated portions of this program and are evaluated as job qualified in work completed will be given appropriate credit for such work by the local area community college/technical institute.

Cumberland Area:

Howard E. Boudreau	President	Fayetteville Technical Institute Fayetteville, North Carolina
C. Wayne Collier	Superintendent	Cumberland County Public Schools Fayetteville, North Carolina
R. Max Abbot	Superintendent	Fayetteville City Schools Fayetteville, North Carolina

Duplin Area:

Carl D. Price	President	James Sprunt Institute Kenansville, North Carolina
Charles H. Yelverton	Superintendent	Duplin County Public Schools Kenansville, North Carolina

Martin Area:

Isaac B. Southerland	President	Martin Community College Williamston, North Carolina
R. Eugene Rogers	Superintendent	Martin County Public Schools Williamston, North Carolina

Mayland Area:

O. M. Blake, Jr.	President	Mayland Technical Institute Spruce Pine, North Carolina
Phil Geouge	Superintendent	Mitchell County Public Schools Bakersville, North Carolina
Harry McGee	Superintendent	Avery County Public Schools Newland, North Carolina
Edgar F. Hunter	Superintendent	Yancey County Public Schools Burnsville, North Carolina

Person Area:

Edward W. Cox	President	Piedmont Technical Institute Roxboro, North Carolina
Walter S. Rogers	Superintendent	Person County Public Schools Roxboro, North Carolina

Wayne Area:

Clyde A. Erwin, Jr.	President	Wayne Community College Goldsboro, North Carolina
John K. Wooten, Jr.	Superintendent	Wayne County Public Schools Goldsboro, North Carolina
William R. Johnson	Superintendent	Goldsboro City Schools Goldsboro, North Carolina

Martin-Washington-Beaufort Area:

Isaac B. Southerland	President	Martin Community College Williamston, North Carolina
Robert G. Alligood	Superintendent	Washington County Schools Plymouth, North Carolina
James F. Blanton	President	Beaufort County Technical Institute Washington, North Carolina

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Summary Block 2.5 (Records Management). 2.50

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Summary Block 4.0 (Business Machines - Reproduction). 4.00

Summary Block 5.0 (Typing-Advanced) 5.00

Summary Block 6.0 (Shorthand) 6.00

Summary Block 7.0 (Accounting - Basic). 7.00

Summary Block 8.0 (Office Procedures) 8.00

Summary Block 9.0 (Data Processing-Concepts and Control). 9.00

Summary Block 10.0 (Machine Transcription). 10.00

Summary Block 11.0 (Word Processing). 11.00

Summary Block 14.0 (Office Management). 14.00

Summary Block 16.0 (Business Law I) 16.00

THE ARTICULATION RESEARCH PROJECT

Background: The Articulation Research Project was initiated on 1 September 1974 as a State Board of Education approved joint effort by the President of James Sprunt Institute and the Superintendent of the Duplin County Public Schools. It was and is supported by the North Carolina Occupational Research Unit, State Department of Public Education with funding provided jointly by the State Departments of Public Instruction and Community Colleges.

The occupational program instructors of James Sprunt Institute and the teachers from the Duplin County High Schools, assisted by appropriate occupational advisors, acting as a joint area committee were responsible for the development of the instructional material content of the initial articulated instructional objectives guide for this program. That guide was in turn updated, revised, and refined by a state level committee to provide a pilot model for a state articulated instructional objectives guide for this program. This guide will be used by all secondary and post-secondary institutions and teachers who have entered into local area articulation agreements for this program.

The state level committee that developed the revisions and refinements to the Duplin Area Committee produced guide consisted of representatives from each local area joint advisory and program committee for the occupation concerned that is operational in the areas of the state that have entered into local area articulation agreements. Each local area sent both secondary and post-secondary occupational teachers/instructors as representatives for each articulated program, plus at least one advisor for each program, to participate as the state advisory and program committee. Where possible, a state occupational education staff member from both the Department of Public Instruction and the Department of Community Colleges participated in the role of acting executive secretary for each joint state advisory and program committee. This committee acting as a whole performed the actions cited above. The joint state advisory and program committee members participating from the local areas and state staff personnel are listed below:

NORTH CAROLINA JOINT BUSINESS EDUCATION ADVISORY AND PROGRAM COMMITTEE

Dr. R. Jean Overton	Acting Executive Secretary	Ass't. Dir. Business Programs, Department of Community Colleges
Katherine Meadows	Ass't. Executive Secretary	Consultant, Business and Office Education, Dept. of Public Instr.
Annette S. Talton	Advisor, Wayne Area	I.C.I. United States,Inc. Pikeville, N.C.
Arlene G. Talton	Advisor, Wayne Area	Town of Mt. Olive Mt. Olive, N.C.
Shelton Norris	Advisor, Cumberland Area	Southern Nat'l. Bank Fayetteville, N.C.

Judy Weathersby	Advisor, Wayne Area	Wayne Community College Goldsboro, N. C.
Herman Kight	Instructor, Duplin Area	James Sprunt Inst. Kenansville, N.C.
Anne M. Waters	Instructor, Wayne Area	Wayne Community College Goldsboro, N.C.
Kenneth H. Neal	Instructor, Wayne Area	Wayne Community College Goldsboro, N.C.
Judy O'Daniel	Teacher, Wayne Area	Wayne County Schools Wayne County, N.C.
Jean A. Hollowell	Teacher, Wayne Area	Wayne County Schools Wayne County, N.C.
Patricia L. Wells	Teacher, Wayne Area	Wayne County Schools Wayne County, N.C.
Richard C. Jarvies	Instructor, Cumberland Area	Fayetteville Tech. Inst. Fayetteville, N.C.
Janice Gaskin	Teacher, Cumberland Area	Cumberland County Schools Cumberland County, N.C.
Barbara S. Mitchell	Teacher, Cumberland Area	Cumberland County Schools Cumberland County, N.C.
Marilyn M. Fowler	Teacher, Cumberland Area	Fayetteville City Schools Fayetteville, N.C.
Elizabeth B. Price	Instructor, Martin Area	Martin Community College Williamston, N.C.
Beulah C. Peppers	Teacher, Martin Area	Martin County Schools Martin County, N.C.
Cherie J. Taylor	Teacher, Martin Area	Martin County Schools Martin County, N. C.
Joyce M. Hardison	Teacher, Martin Area	Martin County Schools Martin County, N.C.
Patti Garland	Teacher, Mayland Area	Mitchell County Schools Mitchell County, N.C.
Wilhelmina Hensley	Teacher, Mayland Area	Yancey County Schools Yancey County, N.C.
Dr. Carlyle P. Woelfer	Project Director/Editor Instructional Objectives Guides	James Sprunt Institute Kenansville, N.C.
Carla Gaiser	Typist	

Purpose of Instructional Objectives Guides

Articulated instructional objectives guides are expected to serve the following purposes:

1. Serve as the primary vehicle for the articulation of subject matter in like occupational programs between the high schools and the community colleges/technical institutes, through use by instructors at both levels as a reference in preparing instruction.

2. Provide a listing of the minimum tasks that a worker is expected to perform in the conduct of a specific level job in the occupation of concern.

3. Identify the primary detailed instructional objectives which are based upon the task listing. The tasks are listed in the sequence of complexity, with the least complex tasks being listed first, except where a task must be performed as a prerequisite to performance of another.

4. Identify the skills (process objectives) and related technical information which must be taught and learned to accomplish the instructional objective. These represent the minimum skills and related information required for adequate occupational proficiency in task performance.

5. Designate the instructional contact hours considered necessary to conduct the required instruction. This is an estimate by the instructors of the advisory and program committee as to the time required to teach the average learner to perform the task. This time estimate is based upon the assumption that the instructor will have available the essential equipment, facilities and instructional aids required to conduct the instruction, with the class size limited to the number of students shown on the equipment list.

6. Identify the performance standards to be met for occupational proficiency in the task. Performance standards used are those considered to be minimum business or industry standards. The ability to meet the listed standards of performance will also be considered as qualification for advanced instruction in that occupational program.

7. Provide a guide in the conduct of sequential occupational competency instruction by duties or blocks, resulting in qualification by the learner to perform limited skill specialist jobs of progressively higher skills until the program objective is reached, ie: file clerk to executive secretary; brake technician to automotive mechanic, etc. As the learner becomes proficient in the performance of tasks in successive more complex blocks, more marketable competencies are gained may be identifiable as the lower level job qualifications of a specialist. This provides an opportunity for even the slow student to eventually gain sufficient skills to perform adequately as a specialist at some level in the occupation, despite the lack of ability to complete the program.

The same holds true for the learner who has progressed satisfactorily through "several" initial blocks of occupational instruction (depending upon the program) and then for some valid reason is unable to complete the program or must leave school. Standardized sequences of instructional block presentation also ensure that lateral articulation can be practiced between the high schools of a local area and simplifies vertical articulation of subject matter with the local post-secondary institution.

8. Provide a listing of equipment required to conduct the program of instruction. Equipment listed is that considered to be the type and quantity essential for the conduct of instruction leading to job qualification in the occupation, with the class limited to the size stated. In some cases, expensive items of equipment, that have limited use, can be shared between schools, if adequate transportation and scheduling support is provided by the county school office. In some instances, it may be possible to delay teaching of several tasks involving special equipment and then arrange to take the class to the location of such equipment for instruction.

9. Provide a list of standardized performance test items to be used in the determination of occupational proficiency. The test items listed cannot be easily compromised, as long as the specifics are not provided, and could be used as study guides.

10. It is recognized that there may be unlisted tasks that some employers may require the worker to do in the occupation, when in their employment. The tasks listed are the minimum requirements for qualification for the job under average circumstances on a regional basis. The tasks are not limited to a specific area employment situation or employer. Instructors may teach more skills and related technical information than is shown in the guides. Such information should be limited to the students who have completed the requirements for the tasks concerned in the instructional objectives guide. Normally the change of tasks to those in the guide should be based upon local committee agreed area requirements and be taught by all schools teaching the block of instruction.

11. Updating and correction of items in the instructional objectives guides--teachers/instructors are encourage to view the instructional objectives critically in an effort to ensure that the contents are valid and current with business and industry requirements. Recommendations for change or correction should be submitted to the executive secretary of the committee, who should then assemble and present them to the advisory and program committee as a whole, for review and possible adoption.

12. Instructional Blocks (Duties)--Under normal circumstances, the teacher/instructor should not plan to conduct instruction in a given articulated block of instruction unless the capability exists to conduct all of the instruction to meet the instructional objectives, with the result that the successful learner is occupationally qualified to perform the tasks identified with the block. This of course means that in most cases the high schools will lack the capability to conduct a full program of

instruction conducted by the CC/TI owing to lack of class time, instructional resources or instructor time. The overall philosophy to be applied in occupational programs is that it is better to ensure that the learner is fully qualified to perform all of the tasks in a limited group of blocks or modules in an occupation and may be qualify at a lower job level, rather than to be only familiar with a large number of duty areas and tasks, but qualified to perform none of them. If higher level job qualification is sought, enrollment at the CC/TI is appropriate.

13. Most occupational programs will contain certain basic blocks of instruction without which a student would not be considered occupationally qualified at any level. Such blocks are normally identified as blocks 0.0 to 1.0 and on occasions blocks 2.0 and 2.5. These blocks usually are base blocks and should be taught early in the program sequence.

14. The instructional objectives guide is also designed to provide the information required to help ensure that the vocational student from high school who enrolls for advanced instruction in the same program at the CC/TI level will receive appropriate credit for articulated occupational course work successfully completed at the secondary education level.

INSTRUCTIONAL OBJECTIVES GUIDE

SUMMARY

August 1977

PROGRAM: Executive Secretary (DCC T-030)
Stenographer/Business Education (High Schools)

COURSES:
Introduction to Business (Block 0.1)
Business Mathematics (Block 0.2)
Personal Development (Block 1.0)
Typing (Beginning) (Block 2.0)
Records Management (Block 2.5)
Office Machines (Calculating) (Block 3.0)
Office Machines (Reproduction) (Block 4.0)
Typing (Advanced) (Block 5.0)
Shorthand (Block 6.0)
Accounting (Basic) (Block 7.0)
Office Procedures (Block 8.0)
Data Processing (Concepts & Control) (Block 9.0)
Transcription Machines (Block 10.0)
Word Processing (Block 11.0)
Office Management (Block 14.0 - Business Administration)
Business Law (Block 16.0 - Business Administration)

Note: Initial Blocks - 0.1, 0.2, 1.0, 2.0, 2.5, 3.0, 4.0, 7.0 and 9.0 also apply to Business Administration and Accounting Programs at the post-secondary level.

COURSE IDENTIFICATIONS:

Department of Public Instruction
Personal Development* - No course number
Typing (Beginning) (I) No. 6111
Records Management*
Office Machines (Calculating)*
Office Machines (Reproduction)*
Typing (Advanced) (II) No. 6112
Shorthand (I & II) No. 6212 and 6213
Accounting (Bookkeeping) (I) No. 6332
Data Processing - Concepts and Control
Office Procedures (Office Practice) No. 6410 or 6431
Introduction to Business No. 6010a
Business Mathematics No. 6910
Word Processing No. 6422
*Note: Usually taught as part of 6410 or 6431 in high schools

Department of Community Colleges (T-030)
Personal Development - HYG 101
Typing (Beginning) (I & II) BUS 102 & 103
Records Management BUS 112
Office Machines (Calculating) (I) BUS 211
Office Machines (Reproduction) (II) BUS 212
Typing (Advanced) (III, IV) BUS 104,205
Shorthand (I, II, III, IV) BUS 106, 107, 108

Advanced Shorthand (I & II) BUS 206, 207, & 208
Accounting (I) BUS 120
Transcription Machines BUS 210
Word Processing BUS 273
Data Processing (Concepts & Control) EDP 104
Office Procedures BUS 215
Introduction to Business BUS 101
Business Math MAT 110
Office Management BUS 271
Business Law I BUS 115

SECRETARIAL (CC/TI) AND STENOGRAPHIC (HIGH SCHOOL) BUSINESS RELATED INSTRUCTIONAL CONTACT HOURS:

Community Colleges/Technical Institutes: 1206 or 1283
High Schools: Total 1260 or 1440

INSTRUCTIONAL OBJECTIVES (Secretarial/Stenographic Courses):

Instructional Hours CC/TI/HS	
Block 0.1 (33 hrs/180 hrs)	Introduction to Business: To provide the learner with a survey of the business world with particular attention paid to information regarding the structure of various types of business organizations, methods of financing, internal organizations and management.
Block 1.0 (30 hrs/30 hrs)	Personal Development: To provide the learner with the ability and knowledge to be better qualified to succeed in business occupations by developing socially desirable practices/habits in personal body care, grooming and dress, ethics, interpersonal relationships, and attitudes towards work, reliability, and honesty.
Block 2.0 (165 hrs/180 hrs)	Typing (Basic): To develop touch typewriting competency, speed and accuracy, and typing techniques at the lowest job level and job qualification speed as applied to tabulation, manuscripts, correspondence, business forms, stencils, and duplicator masters.
Block 2.5 (35 hrs/35 hrs)	Records Management: To provide the learner with broad background training in basic records management principles and techniques, to file accurately, quickly, and systematically.
Block 3.0 (30 hrs/30 hrs)	Business Machines (Calculating): To provide the learner with the techniques, processes, operation and application in the use of adding and calculating machines, with emphasis upon learning the touch system for ten-key adding machines.

Block 4.0 **(33 hrs/33 hrs)**	Business Machines (Reproduction): To introduce the learner to a variety of reproduction equipment to be found in the modern office, and to develop proficiency in using common types of such machines, with emphasis upon the preparation and use of spirit master stencils and offset masters. Where possible, students should also be introduced to common image projection equipment, with emphasis on slides and transparencies.
Block 5.0 **(165 hrs/180 hrs)**	Typing (Advanced): To emphasize production typing problems to the learner and speed building to achieve qualification for initial entry at stenographic and secretarial job levels. To develop techniques needed by the learner in planning and in typing projects that closely approximate the work appropriate to the field of study. These projects include review of letter forms, methods of duplication, statistical tabulation, and the typing of reports, manuscripts, and legal documents.
Block 6.0 **(330 hrs/360 hrs)**	Shorthand: To develop job qualification skills in the learner in shorthand, plus providing typewriting, grammar usage, and their application in the production of mailable, typewritten transcripts.
Block 7.0 **(55-88 hrs/180 hrs)**	Accounting (Basic): To provide the learner with the principles, techniques, and tools of accounting to enable the learner to apply the mechanics of accounting. To develop in the learner the ability to collect, summarize, and report information about service and mercantile enterprises.
Block 8.0 **(143 hrs/360 or 180 hrs)**	Office Procedures: High Schools - To provide the opportunity to qualify the learner to perform basic records management tasks (Block 2.5), to operate common business machines (Calculating-Block 3.0) and (Reproduction-Block 4.0) plus personal development (Block 1.0). CC/TI and High Schools - To provide the opportunity for the practical application of office related skills and knowledge previously acquired in the program of instruction in an actual or simulated office environment. To provide instruction and training on secretarial (CC/TI) and stenographic (high school) duties.
Block 9.0 **(33 hrs/none)**	Data Processing (Concepts & Control): To provide the learner with a working knowledge of the basic theory of data processing how to work with computer concepts, how to perform data batch control, and how to perform processed data control.
Block 10.0 **(33-55 hrs/familiarization)**	Machine Transcription: To qualify the student in the operation and use of the transcription machine and to further develop professional ability in the application of correct grammar, word usage, punctuation, and accuracy while producing mailable copy from machine transcribed dictation for all types of communication forms.

Block 11.0 (33-55 hrs/90-180)	Word Processing: (a) To develop necessary skills and to provide practical experience in the planning, administration, and operations of a word processing center applicable to larger offices; (b) To further develop skills in high speed manipulative techniques on a power key board, proofreading and document revision, use of machine transcription, production of mailable copy from magnetic media and rough drafts, file log, and maintain magnetic media, originate correct formats and apply the appropriate code for the format and determine work priorities.
Block 14.0 (55 hrs)	Office Management: To provide the learner with the fundamental principles of office management, with emphasis on the functions of the office manager and how they are performed, office automation, planning processes, controlling, organizing, and actuating office problems.
Block 16.0 33 hrs)	Business Law I: To inform the learner regarding certain fundamentals and principles of business law, including contracts, negotiable instruments, and agencies.
Block 0.2 (55 hrs/180 hrs)	Business Mathematics: (Not taught as Business Course CC/TI) To develop skills in the application of mathematics to business problems such as payrolls, pricing, interest, taxes, etc.

Academic and Non-Business Education Courses suggested for the Executive Secretary Curriculum - at CC/TI level

	INSTRUCTIONAL CONTACT HOURS
Business Mathematics (MAT 110) or (BUS 109)	55
College Orientation (GUI 101)	11
English Grammar (ENG 111)	55
English Composition (ENG 112)	55
Oral Communications (ENG 204)	33
Applied Psychology (PSY 206)	33
Business Correspondence (ENG 206)	33
State and Local Government (POL 103)	33
Non-Business Courses Total	308
Articulated Business Education Course Total	1283 or 1206
Grand Total CC/TI Secretarial Program	1591 or 1514

Non-Business Education Courses Suggested for Stenographic Program Curriculum

High Schools

	UNITS
English I, II, III	3
English (Business Communication)	1
General Math or Algebra	1
Business Math (If not taught as part of Business Program)	1
Physical Science	1
Biology	1
US Studies	1
Health and Physical Education	1
Electives	2
Academic Total	12
Business Education	8
Curriculum Total	20

(OMITTED)

ARTICULATION RESEARCH PROJECT
OCCUPATIONAL TASKS
AUTOMOTIVE MECHANICS

Frequency that average worker will be required to perform the task.

Level of difficulty: normally performed by skill level or levels checked

BLOCK OR DIVISION: 4.0 (Con't)

TASK		MONTHLY OR LESS	WEEKLY	DAILY	MORE OFTEN	LOWEST	INTER-MEDIATE	HIGHES
4.072	Inspect and replace brake shoes.				X		X	
4.081	Inspect and turn rotor if necessary (disc brakes).	X						X
4.082	Inspect and turn brake drums.		X					X
4.083	Radius grind brake shoes.		X				X	
4.09	Repair or replace wheel cylinder.				X		X	
4.10	Repair or replace master cylinder.				X		X	
4.11	Repair or replace hydraulic power cylinders and valves.				X		X	
4.12	Perform operational brake inspections.				X			X
BLOCK OR DIVISION:	FUEL SYSTEM MAINTENANCE AND REPAIR 5.0							
5.01	Inspect, service, or replace carburetor air cleaner.				X	X		
5.02	Clean or replace fuel filter units.				X	X		
5.03	Remove, service, or replace fuel pumps or fuel lines and hoses.		X				X	
5.04	Install carburetors.				X		X	
5.05	Inspect and measure fuel flow and pressure of system.	X					X	

ARTICULATION RESEARCH PROJECT
OCCUPATIONAL TASKS
DRAFTING (GRAPHIC COMMUNICATIONS)

APPENDIX C-2b

TASK:	Frequency of Task Performance By Average Worker.			Job Level at Which Task Is Usually Performed or Applies.		
	SELDOM	WEEKLY	DAILY	LOWEST	INTERMEDIATE	HIGHEST
BLOCK OR DIVISION: Basic Technical Drafting (Basic Graphic Communication). 1.0						
1.01 Draw objects using orthographic projections.			X	X	X	X
1.02 Draw objects using axonometric system.			X	X	X	X
1.03 Draw objects in the oblique.			X	X	X	X
1.04 Draw objects in the perspective.			X	X	X	X
BLOCK OR DIVISION: Problem Solving in Graphics. 2.0						
2.01 Define the problem.			X	X	X	X
2.02 Identify problem limits.			X	X	X	X
2.03 Use technical literature in developing a research base for the problem.			X	X	X	X
2.04 Analyze available related information and select problem solving method.			X	X	X	X
2.05 Design and implement a strategy for experimental purposes.			X	X	X	X
2.06 Analyze and record results of experimental strategy.			X	X	X	X
2.07 Have an alternate strategy if first choice does not work.			X	X	X	X

- B -

ARTICULATION RESEARCH PROJECT

OCCUPATIONAL TASKS

BUSINESS ADMINISTRATION - SECRETARIAL SCIENCE
ACCOUNTING

		Frequency that average worker will be required to perform the task.			Level of difficulty: Normally performed by skill level or levels checked.		
BLOCK OR DIVISION:	Typewriting (Basic) 2.0 (continued)						
TASK:		SELDOM	WEEKLY	DAILY	LOWEST	INTERMEDIATE	HIGHEST
2.07	Prepare letters (business and personal).			x	x	x	x
2.08	Compose simple copy at typewriter.		x		x	x	x
2.09	Make carbon copies.			x	x	x	x
2.10	Perform simple tabulation.			x	x	x	x
2.11	Prepare outlines.	x			x	x	x
2.12	Prepare manuscripts.		x		x	x	x
2.13	Prepare fill-in forms.			x	x	x	x
2.14	Prepare charts, tables and other tabulated reports.		x	x		x	x
2.15	Prepare simple agenda.	x					x
2.16	Prepare simple stencils and duplicator masters.			x	x	x	x
BLOCK OR DIVISION:	Records Management 2.5						
2.51	Prepare folders and other filing material for use.			x	x	x	x
2.52	Sort and classify material.			x	x	x	x
2.53	Use filing equipment.			x	x	x	x
2.54	Requisition file material.		x		x	x	x

ARTICULATION RESEARCH PROJECT

Instructional Guide

PROGRAM: Automotive Mechanics (DCC V-03)
(DPI - High Schools - N/A)

COURSE: Braking System Maintenance and Repair (Block 4.0)

COURSE DESCRIPTION: Department of Public Instruction - Currently part of
T & I No. 7393 - Automotive Mechanics II

Department of Community Colleges -
AUT 1121 - Braking Systems

INSTRUCTIONAL OBJECTIVES:

To provide the learner with occupational instruction to develop the skills and required related technical knowledge to qualify the learner to perform inspection, adjustment, and repair of automotive braking systems, according to manufacturer's specifications and meet industry standards.

QUALIFICATION OR JOB SKILLS GAINED:

With successful completion of this block of instruction, to include verification of qualification by performance evaluation, using industry performance standards, the learner is qualified as an Automotive Brakes Technician.

PREREQUISITES:

High Schools and post-secondary schools - Block 0.0 or evidence of adequate knowledge and experience regarding this block, to be verified by the successful completion of a demonstrated performance evaluation.

PERFORMANCE EVALUATION:

Test items (less specifics) for both written evaluation of related technical information and demonstrated performance evaluation for this block of instruction are attached or will be developed.

EQUIPMENT REQUIREMENTS:

General tool list attached to the last block of this program. Special equipment and tools list peculiar to this block is attached.

INSTRUCTIONAL CONTACT HOURS: High Schools: 60
CC/TI: 66

NOTE 1: Instructional time allocations for each instructional objective are suggested time only.
NOTE 2: Service manuals are considered as Related Technical Information.

ARTICULATION RESEARCH PROJECT

INSTRUCTIONAL GUIDE

PROGRAM: Drafting (Graphics Communication)

COURSE: Basic Technical Drafting (Basic Graphics Communication) (1.0)

COURSE DESCRIPTION: Department of Public Instruction: Included in Course Numbers 7551 and 7552, Introduction to Technical Drafting I and Basic Technical Drafting II.

Department of Community Colleges: ARC 1226
DFT 1121, 1122

INSTRUCTIONAL HOURS: High Schools - 160
CC/TI - 88*

INSTRUCTIONAL OBJECTIVES:

1. To develop a knowledge about orthographic drawings.
2. To draw objects using orthographic drawings.
3. To draw objects using axonometric system.
4. To draw objects using oblique drawings.
5. To draw objects using perspective drawings.

JOB QUALIFICATION OR SKILLS GAINED:

This is a basic (beginning) visualization course. Upon satisfactory completion of this instruction, the student is prepared to learn the primary skills required for activities where basic visualization skills are needed. Also, the student is prepared to take more of the advanced courses in graphic communications.

PREREQUISITES: Introduction to Graphics (Drafting) (Block 0.0)

PERFORMANCE EVALUATION:

By competency based procedures. The student must demonstrate possession of required information and ability to perform required tasks and meet required performance standards. See outline type test items attached.

EQUIPMENT:

See consolidated equipment list attached to last block of program.

*Note: At the CC/TI level the instruction providing the skills and related technical information acquired in this block is repeated and used in succeeding blocks to provide the student with more advanced levels of the same basic skills, resulting in up to three times the initial instruction in this area.

ARTICULATION RESEARCH PROJECT

INSTRUCTIONAL GUIDE

PROGRAM(S): SECRETARIAL SCIENCE (EXECUTIVE SECRETARY - DCC T-030), ACCOUNTING (DCC T-016), AND BUSINESS ADMINISTRATION (DCC T-018)

COURSE: Records Management (Block 2.5)

COURSE DESCRIPTION: Department of Public Instruction: Included in 6410 and 6431

Department of Community College: Bus 112, Records Management

INSTRUCTIONAL HOURS: High Schools - 35 to 45 Hours; CC/TI - 33 Hours.

INSTRUCTIONAL OBJECTIVES:

1. To provide learner with broad background training in basic filing principles and records management systems.
2. To file accurately, quickly, and systematically.

JOB QUALIFICATIONS:

Those students who have successfully completed this course and are certified as occupationally qualified, can perform basic records management tasks as a file clerk. Job qualification to be determined by performance testing at end of course or program.

PREREQUISITES: Basic Typing (Block 2.0)

PERFORMANCE EVALUATION: By performance testing (see attached test items). Learner is expected to meet initial entry level occupational performance standards.

EQUIPMENT: See Equipment List.

Note: Current Civil Service and D.O.T. job descriptions for business office clerical, stenographic and secretarial jobs establish a requirement for records management (filing) job skill qualification.

ARTICULATION RESEARCH PROJECT
COURSE SUMMARY AND INSTRUCTIONAL OBJECTIVES

PROGRAM: Mechanical Drafting and Design - T-043 (2 Year)
Mechanical (Industrial) Drafting - V-017 (1 Year)

COURSE: Design Drafting I (Prepare Preliminary Drawings)

COURSE NUMBER: Department of Community Colleges - DFT 205/DFT 1171
Department of Public Instruction - N/A

INSTRUCTIONAL HOURS: 88 Hours - 2 Year Program
88 Hours - 1 Year Program

INSTRUCTIONAL OBJECTIVES: To provide job qualification competencies required to perform drafting tasks related to the activity or duty area of preparing preliminary drawings. Also included is application of problem solving procedures, model making, layout and design sketching skills acquired in Part I of this program. Use of handbooks, tables, ANSI and related manuals as references will be stressed. Problem solving application will be extended to include the preparation of written and oral engineer reports.

JOB QUALIFICATIONS: This course does not by itself provide a specific D.O.T. or industry identified job qualification. It is a major component in the development of job qualification in the specialty area of Mechanical Drafting and Design Technician or the lower level job of Mechanical (Industrial) Drafter. It does review and use most of the skills and techniques acquired in the basic portion of the Drafting (Graphic Communications) - Part I of this program.

PREREQUISITES: DFT 102/DFT 1192, DFT 103/DFT 1190, DFT 204/DFT 1125, and Part I - Basic.

PERFORMANCE EVALUATION: By performance (Competency Based) testing. Test items should be task performance directed. Performance standards should parallel those required to meet initial employment job performance requirements in related areas of activity for the task concerned.

EQUIPMENT: Drafting room equipment and materials normally available and used in the standard mechanical drafting environment. See also Appendix A, Part I - Basic. Model making materials as needed. To provide an instructional vehicle, every effort should be made to organize the classroom and conduct instruction, class administration and supervision in a way that portrays an Engineer Office atmosphere. Such action will provide the opportunity for concurrent instruction in "Office Practice".

BLOCK OR DIVISION NUMBER: 4.0 TITLE: Braking System Maintenance and Repair

TASK NUMBER: 4.083 TITLE: Radius Grind Brake Shoes.

INSTRUCTIONAL OBJECTIVE - 4.083: How to Radius Grind Brake Shoes.

SKILLS: (Process Objectives)

4.0831 - How to radius grind brake shoes.

RELATED TECHNICAL INFORMATION:

- Equipment manufacturer's operation manual.
- Manufacturer's specifications.

SUGGESTED INSTRUCTIONAL TIME: 4.083, 2 hours.

REQUIRED PERFORMANCE STANDARDS:

- Student uses proper equipment. Follows manufacturer's specifications.
- Flat Rate plus 20% task performance time.

BLOCK OR DIVISION NUMBER: 1.0 TITLE: Basic Technical Drafting (Basic Graphic Communications) (con't.)

TASK NUMBER: 1.02 TITLE: Draw Objects Using Axonometric System.

INSTRUCTIONAL OBJECTIVE - 1.02: How to Draw Objects Using Axonometric System.

SKILLS: (Process Objectives)

How to:

1.021 - Draw an object in isometric.
1.022 - Draw an object in dimetric.
1.023 - Draw an object in trimetric.
1.024 - Draw axonometric sections.

RELATED TECHNICAL INFORMATION:

- Know history and origin of axonometric system.
- Know difference between projected and constructed axonometric drawings.

SUGGESTED INSTRUCTIONAL TIME: 1.02, 10-20 hours. (For planning only.)

REQUIRED PERFORMANCE STANDARDS: (Where appropriate, neatness applies.)

- Draws axonometric system with 85% accuracy.

BLOCK OR DIVISION NUMBER: 2.5 TITLE: Records Management

TASK NUMBER: 2.52 TITLE: Sort and Classify Material.

INSTRUCTIONAL OBJECTIVE - 2.52: How to Sort and Classify Material.

SKILLS: (Process Objectives)

2.521 - How to classify records management topics of material.
2.522 - How to sort material into alphabetic groups.
2.523 - How to handle classified or sensitive material, to include destruction of such material when required.

RELATED TECHNICAL INFORMATION:

- Know records management rules.
- Definition of classified or sensitive material.
- Rules and laws pertaining to right of privacy and the release or handling of classified, sensitive, or personal information.

SUGGESTED INSTRUCTIONAL TIME: 2.52, 20-30 hours.

REQUIRED PERFORMANCE STANDARDS:

- Demonstrates working knowledge of filing rules and the ability to apply same in classifying and sorting items to be filed, to include handling of classified material, according to either filing rule, with 90% accuracy.

DFT 205/DFT 1171 (Cont.)

TASK LIST: Prepare Preliminary Drawings

Module .10 - Apply Special Skills and Information to Preparation and Obtaining Approval for Preliminary Drawings:

205.11 - Apply skills and techniques acquired in Problem Solving, including model making. (See Block 2.0, Part I - Basic.)

205.12 - Prepare written and oral engineer reports on problem solution.

205.13 - Apply skills and related technical information acquired in Freehand Drawing and Sketching and in Composition (Layout). (Part I - Basic.)

205.14 - Use handbooks, tables, ANSI and related manuals as references in problem solving and preliminary drawing preparation.

Module .20 - Prepare Layout Drawings:

205.21 - Obtain configuration information available.

205.22 - Apply Composition techniques. (Acquired in Composition Block, Part I.)

205.23 - Determine missing configuration details on layout.

205.24 - Receive guidance from engineer.

205.25 - Determine limits on geometry of design to include manufacturing tolerances and show on production layout.

205.26 - Effect liaison with interfering groups to resolve problem.

205.27 - Complete production layout, change preliminary design as needed to accommodate interferences.

205.28 - Work with engineer to calculate change in stress caused by design change.

205.29 - Obtain approval from engineer for layout.

DFT 205/DFT 1171 (Cont.)

TASK LIST: Prepare Preliminary Drawings (Cont.)

Module .50 - Prepare Material and Standard Parts List:

205.51 - Determine material needed from specifications and dimensions in all detail drawings used on each assembly.

205.52 - Determine standard parts needed from assembly drawings and special detail drawings which altered standard parts.

Module .60 - Check Drawings and Obtain Release Approval:

205.61 - Verify dimensions and references on drawings.

205.62 - Check for drafting omissions, errors and completeness.

205.63 - Check for proper format, headings and note completeness.

205.64 - Check for proper callouts and proper general notes.

205.65 - Check for compliance with company standards and general appearance.

205.66 - Obtain final approval signatures.

MINIMUM PERFORMANCE STANDARDS:

Drawings conform to ANSI Manuals where appropriate.

Neatness and accuracy apply.

Problem solving, freehand sketching and drawing, and Composition (Layout) techniques properly applied. Reports are clear, concise and to the point. Model is well executed and portrays object accurately.

Executes drawings within time limits considered acceptable for initial employment.

Demonstrates knowledge of related technical information, application of theories and procedures, symbols and conventions, and terminology with at least 80% accuracy.

Performs tasks required in this duty area in proper sequence and conducts the necessary coordination.

Uses appropriate reference technical manuals, tables and catalogs correctly.

TEST ITEMS - AUTOMOTIVE MECHANIC

BLOCK OR DIVISION NUMBER: 0.00 TITLE: Introduction to Automotive Technology

SUB-BLOCK NUMBER: 0.20 TITLE: The Motor Vehicle: Assembly Identification, Assembly and Vehicle Operation, and Operator Maintenance

TASK NUMBER: .207 **TITLE:** Drive Train and Manual Transmission: Know Purpose, Operations, Major Parts and Care

1. State the purpose of a transmission.

2. State the purpose of following items A through E and G, and identify the term F.

   a. Clutch disc

   b. Pressure plate

   c. Release bearing

   d. Release yoke

   e. Flywheel

   f. Free travel

   g. Pilot bearing

3. Describe the clutch operation in the following positions.

   a. Engaged

   b. Disengaged

4. List three types of pressure plates.

   a.

   b.

   c.

5. Write purpose of the drive line.

6. State the purpose of the following terms:

   a. Propeller shaft

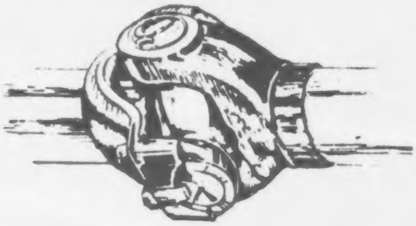
   b. Slip joint

   c. Universal joint

   d. Center bearing support

TEST ITEMS (CON'T)

7. Identify the following universal joint as to type:



____

8. Name four major components of the power train.

9. What kind of lubricant is used in a standard transmission?

10. How often should the lubricant be checked in a differential?

11. What part or parts in the power train could cause vibration?

12. What is the purpose of the throwout bearing?

Competency Test: (Performance Requirement)

A. Given: 1) an automobile with a standard transmission; 2) twin-post lift; the trainee will:

1. Position vehicle on twin-post lift.

2. Lift vehicle.

3. Identify and state the purpose of the transmission, drive shaft, u-joints, and differential.

4. Lower the vehicle to the floor.

The trainee will perform the preceding tasks accurately (100%) and safely within 15 minutes. (If no hoist available, omit items 1, 2 and 4.)

B. Given: 1) an automobile with standard transmission; 2) an owner's handbook; the trainee will:

1. Find the preventative maintenance items that pertain to the power train.

2. Indicate the grease check points on the transmission and the differential.

The trainee will perform the preceding tasks accurately and safely within 15 minutes.

Note: Performance Standards - 80% correct response when five or more test items are used.

(SAMPLE)

TEST ITEMS

7.0 BLOCK: DRIVE TRAIN AND MANUAL TRANSMISSION

MODULE: Clutch

MODULE OBJECTIVE: After completion of this module, the student will be able to diagnose and repair any clutch problems to meet manufacturer's specifications in Flat Rate plus 20% time per vehicle.

Given safety procedures, service manuals, manufacturer's specifications, proper tools, and equipment the student will demonstrate the following competencies:

COMPETENCIES OR TASK TO BE PERFORMED AND PERFORMANCE STANDARDS

7.11 Adjust Clutch Pedal Linkage

OBJECTIVE: Given a vehicle, the student will adjust the pedal linkage to an accuracy of 1/16 inch.

7.14 Road test and noise diagnosis

OBJECTIVE: Given a vehicle with clutch bearing or fly-wheel malfunction, the student will road test and correctly describe noise encountered and probable cause and correction required of either clutch bearing or fly-wheel.

7.15 Replace clutch assembly and/or release bearing and fork

OBJECTIVE: Given a vehicle with malfunctioning clutch and/or release bearing and fork, the student will remove and replace clutch assembly and/or release bearing and fork so that proper and smooth engagement and release is provided.

7.08 Replace pilot bearing

OBJECTIVE: Given a vehicle, the student will replace a pilot bearing to provide proper fit as per manufacturers' specifications.

TEST ANSWERS

1. Purpose of a transmission - To provide a method of varying the gear ratio between the engine and drive wheels.

2. a. Clutch disc - Provides friction between pressure plate and flywheel.

   b. Pressure plate - Provides pressure between pressure plate, clutch disc, and flywheel.

   c. Release bearing - Allows a method of releasing spring pressure of pressure plate.

   d. Release yoke - Linkage inside clutch housing used to engage and disengage clutch.

   e. Flywheel - Allows a working surface for the clutch assembly that is attached to it.

   f. Free travel - Amount of clutch pedal movement until release bearing contacts pressure plate.

   g. Pilot bearing - Located in crankshaft, allows for correct support and alignment of transmission input shaft.

3. a. Engaged - Spring pressure clamps clutch disc between pressure plate and flywheel face.

   b. Disengaged - Release bearing and linkage used to release pressure.

4. a. Diaphragm

   b. Coil spring

   c. Centrifugal

5. Purpose of the drive line - To carry the driving power from the transmission to the rear wheels.

6. a. Propeller shaft - Driving shaft that connects the transmission output shaft to the differential.

   b. Slip joint - Allows the propeller shaft to adjust to variations in length.

   c. Universal joint - Allows the propeller shaft to move up and down without breaking.

   d. Center bearing support - Supports the center of the propeller shaft when a two-piece drive line is used.

7. Cross and roller

Note: Written test items may also be used with Block 7.0 - Power Train and Manual Transmission to evaluate knowledge of related technical information for Block 7.0.

TEST ITEMS

BLOCK OR DIVISION NUMBER: 6.0 TITLE: Lettering (Graphic Communications)

TASK:

6.01 Given a display of a series of examples of various types, styles and techniques of freehand lettering commonly used in graphic communication the student will: Identify in writing the types, styles and techniques of lettering displayed.

Standard: Student identifies 80% of the lettering displayed accurately.

6.01 Given a requirement to letter freehand several types and styles of letters and apply specific lettering techniques to a designated job, the student will demonstrate ability to select and letter freehand two types of lettering in two styles, applying a common lettering technique selected by the instructor.

Standard: Types and styles of lettering appropriate for job; all letters correctly formed and proportioned; technique applied correctly; time limits, reasonable; neatness applies.

6.02 Given a variety of transfer and pressure sensitive type commercial letters, to be used on a designated graphic communication, the student will demonstrate ability to select and use the correct letters for job.

Standard: Letters correctly and neatly applied (90%); letters selected are appropriate for the job; all words are spelled correctly (100%); punctuation is correct (100%).

6.03 Given a lettering job with a requirement to use a common mechanical lettering device the student will: Demonstrate ability to select and use the correct mechanical lettering items for the job.

Standards: Lettering type, style, size, etc., appropriate for job; words spelled correctly with proper punctuation; letter and word spacing is correct; lettering is neat and performed in a reasonable time limit.

6.04 Given a set of lettering templates and a graphics job with a lettering requirement involving different styles and types of specified letters the student will: Letter the job selecting and using the templates required for specified styles and types of lettering.

Standard: Student selects correct templates for the job; student uses templates correctly, produces neat work, correctly spaced; production time is reasonable.

6.05 Given a graphics job order with a lettering requirement that can be satisfied by using a headliner or phototypositor to produce required letters the student will be required to:

a. Produce desired lettering as specified in the job order, using a phototypositor.
b. Produce lettering specified by the job order using a headliner.

Standards: The student uses phototypositor correctly producing desired letters, properly spaced with punctuation and spelling correct. Performs operator maintenance specified by manufacturer; Student uses headliner correctly to produce lettering specified in job order, properly spaced, with punctuation and spelling correct. Performs operator maintenance specified by manufacturer.

BLOCK OR DIVISION NUMBER: 2.0 TITLE: Typewriting (Basic)

2.01 Given a typewriter, paper, and 100-word paragraph composed of letters, figures, and symbols, type one readable copy using good typing posture and techniques.
Standard: One copy with no more than 5 errors.

2.02 Given a roll of gummed labels, typewriter, eraser and list of ten names, prepare labels for the ten names.
Standard: 100% accuracy.

2.03 Prepare a postal card, given a typewriter, a postal card, an eraser, the addresses (both return and receiver address) and the message to be typed with correct placement.
Standard: Mailable copy.

2.04 Given a simple 200 word rough draft page of copy with proofreader's marks, typewriter, and necessary material, prepare a final draft.
Standard: Mailable copy in 25 minutes.

2.05 Student will demonstrate his ability to correctly address 10 envelopes and 10 labels, given the typewriter, eraser, envelopes, and gummed labels and addresses of sender and receiver.
Standard: 95% neatness and 100% accuracy in 20 minutes.

2.06 Given a 200-word printed memo form, typewriter, eraser, and message, name and department of sender and receiver, prepare an interoffice memo.
Standard: Prepared in 15 minutes - 95% neatness, produces mailable copy.

2.07 Set up and type in an acceptable letter style, a properly positioned 200 word business letter, given a typewriter, an eraser, letterhead paper, and information for an acknowledgement letter (receipt of order).
Standard: 95% neatness in 20 minutes; produces mailable copy.

2.08 Given basic information for a simple business letter and necessary equipment, compose an appropriate letter of approximately 150 words.
Standard: Mailable copy in 30 minutes.

2.09 Prepare a letter with a carbon copy given the typewriter, letter, carbon paper, onionskin paper, copy paper, letterhead, eraser, and erasing shield.
Standard: 100% accuracy and 90% neatness in 40 minutes, mailable copy.

2.10 Given a typewriter, paper, eraser, and a page of tabulated information, prepare a copy of the information in tabulated form.
Standard: 90% accuracy and mailable copy in one hour.

2.11 Given a typewriter, copy paper, eraser, rough copy of an outline, prepare a properly positioned copy of an outline.
Standard: 100% accuracy and mailable copy in 30 minutes.

2.12 Given a typewriter, required material, a page of rough draft manuscript with proofreader's marks, prepare in final form.
Standard: Mailable copy in 40 minutes.

AUTOMOTIVE TECHNOLOGY

Special Tools and Equipment

BLOCK OR DIVISION NUMBER: 6.0 TITLE: Steering and Front End Maintenance & Repair

Grease lubricator
Transmission grease gun
Belt tension gauge
Pittman arm puller
Crowsfoot (2)
Pressure gauge set
Special tools for rebuilding power steering components
Seal driver set
Bearing packer
Bushing driver set
Air chisel
Special sockets for ball joints
Steering wheel puller
4 ton hydraulic floor jack
King pin reamer set (optional)
Wheel balancer
Front end alignment machine and equipment
Power steering pump pulley puller
Tie rod remover and tie rod sleeve wrench
Inchpound wrench
Bench-holding fixture
Coil spring compressor tool
Ball joint removing tool
Control arm bushing tool set

APPENDIX C-6

ARTICULATION RESEARCH PROJECT

DRAFTING (GRAPHIC COMMUNICATIONS) PART I (BASIC)

SUGGESTED EQUIPMENT LIST

For a school conducting a Vocational or Technical Drafting (Graphic Communications) Program based upon 18 student class size.

Quantity	Description
18	Practical drawing outfits, including:
	1 - drawing instrument set
	24" x 36" wide vinyl drawing top covers (self-sealing)
	1-T-square, maple, clear plastic lined, 30"
	1 - triangle, 30° x 60°, plastic 10"
	1 - triangle, 45°, plastic 10"
	1 - adjustable triangle
	1 - scale, architect's triangular, engine divided
	1 - engineer's scale
	1 - mechanical scale
	1 - protractor, plastic, semi-circular
	1 - set of plastic curves
	1 - adjustable curve
	1 - roll 3/4" drafting tape
	2 - lead holders
	1 - eraser, vinyl
	1 - electric eraser, plug-in type
	1 - sandpaper pad pencil pointer
	1 - ink, black, 3/4 oz. bottle
	5 - sets rapid-o-graph (complete sets)
	1 - instruction book on "Use and Care of Drawing Instruments"
	1 - lettering chart
	3 - H heads
	2 - 4-H heads
	1 - tube compass lead
18	Bench dusters
3	Drafting machines
1	Proportional divider
1	Compass beam
1	Compass, drop bow pen and pencil
1	Caliper, inside
1	Diazo machine
1	Paper cutter (Min-36" blade)
1	Shears, trimming, 12"
2	Pencil sharpeners
*18	Drafting tables w/stools, 6-drawer storage unit (24" x 36" top)
1	Light table
1	Bookcase, 37"w x 12"d x 86"h
1	Storage cabinet with lock, 80" x 36" x 18"

*Note: This equipment recommended for High School only. Professional size drafting tables recommended for CC/TI.

Equipment List (con't.)

Quantity	Description
1	Table, library 30" x 60"
1	Filing cabinet with lock, 5-drawer full suspension legal size
1	Overhead projector with screen
1	Opaque projector
1	Chalkboard drafting machine
18	Mechanical lead pointers
1	Drafting pencil sharpener
1	Film strip projector with cassette tape
1	Stapler and remover
1	5-drawer drawing file (50 5/16" x 38 1/2" x 2 1/2" drawer)
1	Drawing file closed base - 6" high
1	Set blackboard drawing instruments including large 30° x 60° triangle and large compass
1	Lettering set (mechanical)
18	Sets lettering Templates
1	Headliner
1	Phototypositor

Black and White Photography (Develop and Print)

1	Photo enlarger
1	Contact frame
1	Densitometer
1	Print paper drier
1	Magnasight
4	Developing trays
1	Darkroom for film developing
1	Wash tank
3	Film tanks
3	Film reels
1	Film drier
1	35mm camera with lenses and filters
1	Light meter
1	Polaroid camera
1	Set of flood lights

Microfilm Photography

1	Darkroom for camera work
1	Microfilm camera unit-35mm (16mm optional)
1	Reader-Printer Unit
1	Automatic Exposure Control Unit for Planetary Cameras
1	Image control keyboard
1	Film loader
2	Film storage cabinets
1	Film loading station
1	Film inspection station

Electrostatic Copier

1	Electrostatic copier (available for instruction)

ARTICULATION RESEARCH PROJECT

Student Vocational Skills Record

COURSE: Fuel System Maintenance and Repair, Block 5.0

(For Instructor's File)

NAME: ______________________ DATE: ______________

CERTIFIED BY: _________________ TITLE: ______________

INSTITUTION: __________________

CODE	TASKS
[U L M S]	Inspects, services, or replaces carburetor air cleaner.
[U L M S]	Cleans or replaces fuel filter units.
[U L M S]	Removes, services, or replaces fuel pumps or fuel lines and hoses.
[U L M S]	Installs carburetors.
[U L M S]	Inspects and measures fuel flow and pressure of system.
[U L M S]	Adjusts carburetor.
[U L M S]	Inspects, cleans and adjusts choke unit (automatic and manual).

CODE	TASKS
[U L M S]	Inspects, services, or replaces gas tank, cap and sending unit.
[U L M S]	Repairs or services carburetors.
[U L M S]	Repairs or services exhaust emission control systems, to include manifold heat.
[U L M S]	Analyzes fuel injection problems by means of electrical diagnostic equipment.
[U L M S]	Performs operational inspections of exhaust emission control system.

GENERAL ATTITUDE:

[U L M S] Industrious and energetic

[U L M S] Cooperative with associates and instructors

[U L M S] Dependable

[U L M S] Punctual

CODE - Circle appropriate letter.

U - Unqualified.
L - Limited skill, requires supervision.
M - Moderate skill, requires minimum supervision.
S - Skilled, works independently.

APPENDIX C-8a

"SUGGESTED SAMPLE"

ARTICULATION RESEARCH PROJECT

STUDENT VOCATIONAL SKILLS RECORD

COURSE: PROBLEM SOLVING IN GRAPHICS, BLOCK 2.0

(FOR INSTRUCTOR'S FILE)

NAME:______________________________DATE:________________

CERTIFIED BY:________________________TITLE:________________

INSTITUTION:____

CODE	TASKS
(U L M S)	Define the Problem.*
(U L M S)	Identify problem limits.*
(U L M S)	Use technical literature in developing a research base for the problem.*
(U L M S)	Analyze available related information and select problem solving method.*
(U L M S)	Design and implement a strategy for experimental purposes.*
(U L M S)	Analyze and record results of experimental strategy.*
(U L M S)	Have an alternate strategy if first choice does not work.*
(U L M S)	Summarize and present the sequence of events and steps utilized in problem solving from definition to solution.*

GENERAL ATTITUDE

(U L M S) Industrious and energetic

(U L M S) Cooperative with associates and instructors

(U L M S) Dependable

(U L M S) Punctual

CODE - CIRCLE APPROPRIATE LETTER

U - Unqualified
L - Limited skill, requires supervision
M - Moderate skill, required minimum supervision
S - Skilled, works independently

*These are the tasks as shown in the task listing.

APPENDIX C-8b

"SUGGESTED SAMPLE"

ARTICULATION RESEARCH PROJECT

Student Vocational Skills Record

COURSE: Personal Development, Block 1.0

(For Instructor's File)

NAME: ______________________ DATE: ______________

CERTIFIED BY: ______________________ TITLE: ______________

INSTITUTION: ______________________

CODE	TASKS
[U L M S]	Uses proper techniques for good body care.
[U L M S]	Maintains neat, well groomed appearance.
[U L M S]	Dresses appropriately.
[U L M S]	Displays proper attitude toward work.

CODE	TASKS
[U L M S]	Practices good business ethics.
[U L M S]	Practices telephone courtesy.
[U L M S]	Displays physical poise.
[U L M S]	Meets public tactfully.
[U L M S]	Practices appropriate etiquette.

GENERAL ATTITUDE:

[U L M S] Industrious and energetic

[U L M S] Cooperative with associates and instructors.

[U L M S] Dependable

[U L M S] Punctual

CODE - Circle appropriate letter.

U - Unqualified
L - Limited skill, requires supervision.
M - Moderate skill, requires minimum supervision.
S - Skilled, works independently.

APPENDIX C-8c

APPENDIX D

ARTICULATED OCCUPATIONAL PROGRAM DEVELOPMENT JOB AND TASK ANALYSIS OUTLINE

1. OCCUPATIONAL JOB ANALYSIS. WHAT IS DONE ON THE JOB IN THE OCCUPATION. (THE WHAT)	2. OPERATIONS TO BE PERFORMED IN TASK ACCOMPLISHMENT. THE REQUIRED SKILLS OR COMPETENCIES. (TASK ANALYSIS) (THE HOW)	3. RELATED INFORMATION. (THE KNOWLEDGE REQUIRED TO DO THE JOB, ETC.) (TASK ANALYSIS) (THE WHY)	4. TOOLS AND EQUIPMENT REQUIREMENTS. (THE WITH WHAT)	5. OCCUPATIONAL PERFORMANCE STANDARDS REQUIRED FOR JOB LEVEL QUALIFICATION. (THE HOW WELL)	6. DEVELOPMENT OF STANDARDIZED TEST ITEMS FOR SKILL OR COMPETENCY LEVEL EVALUATION. (HAS LEARNING OCCURRED)
The occupation or job is reduced to: 1) Major activity divisions (broad general areas wihin an occupation or job that are readily identified as major or separate activities, but collectively make up the job). These divisions in some cases can be full-time jobs of low level workers or highly skilled specialists normally listed in order of complexity, from least complex to the most complex. (continued next page)	The specific actions or performance that must be learned to satisfactorily do the job. This is what is to be taught. It is developed by the instructors, with advisor assistance. Some skills or competencies are basic to the occupation and used throughout. These are learned first. Others are taught and learned when first required in the sequence of instruction. (continued next page)	TECHNICAL INFORMATION: Information essential to job performance. This information is normally taught by the occupational instructor. It is determined with the assistance of the advisors. It is often taught before the performance phase of instruction with which identified, or concurrently. GENERAL INFORMATION: Nice to know information about the occupation. Has broadening value for the learner. (continued next page)	The tools and equipment required for the conduct of instruction as well as that with which the learner must become qualified to use, to be occupationally qualified. There is much data now available in current instructional guides with this information. The listings developed should be checked by the occupational advisors to ensure that it is current, or essential. (Instructors with advisor review.)	These are the standards that a learner must meet in demonstrating the skills or competencies that he had acquired in the effort to qualify for a specific job-level in a given occupation. These standards should be those required by business or industry, on a wide area (State) basis, for the occupation. The standards should be determined by the advisors, with instructor assistance.	The test items are developed with the development of the skills or competencies for the primary tasks and the essential knowledge. These test items should be competency based upon the instructional objectives and test if the learner has acquired the skills or competencies required to perform the task, has the necessary technical knowledge and can meet the required occupational standards for that task. (Developed by the occupational instructors and reviewed by the advisors to determine if an item will provide an adequate test of the skill or competency.) (continued next page)

ARTICULATED OCCUPATIONAL PROGRAM DEVELOPMENT JOB AND TASK ANALYSIS OUTLINE

(CONT.)

1. (THE WHAT)	2. (THE HOW)	3. (THE WHY)	4. (THE WITH WHAT)	5. (THE HOW WELL)	6. (HAS LEARNING OCCURRED)
2) Breakdown of major activity divisions to individual tasks or routine work projects that may be assigned to a worker as the normal requirements of the job. (These tasks may be used as the teaching unit topics.) The information needed to develop the above must of necessity be obtained from the occupational advisors, to ensure that it is complete, current, and that occupational needs are being satisfied.	Each lesson and course of instruction should develop sequential competencies. 1. (Continued) (THE WHAT) The major divisions may be the occupational courses of a curriculum if the divisions are identifiable. Advisors also identify the frequency that the task is performed and the skill level required to perform the task.	GUIDANCE INFORMATION: The information the learner needs to know in choosing, preparing for, securing, holding, and making progress on the job. May be taught by others than by the occupational instructor as well as the instructor.			Test items should be tested for validity and reliability before use. (Maybe outline in nature; will require specific problem detail to complete test item for use.)

ARTICULATION RESEARCH PROJECT
JAMES SPRUNT INSTITUTE AND THE DUPLIN COUNTY PUBLIC SCHOOL SYSTEM
JAMES SPRUNT TECHNICAL INSTITUTE
P.O. BOX 398
KENANSVILLE, NC 28349

SUBJECT: Use of Instructional Objectives Guides in the Conduct of Instruction for Articulated Occupational Programs

TO:

Accompanying this letter is an Instructional Objectives Guide for the occupational education program of your interest, which has been developed as part of the Articulation Research Project being conducted as a joint effort by James Sprunt Institute and the high schools of the Duplin County Public School System. It is expected that this guide will be used by all occupational education supervisors, principals, guidance counselors, and occupational program teachers/instructors, secondary school system and James Sprunt Technical Institute in meeting the requirements for the articulation of subject matter of the occupational programs involved in the Articulation Research Project. The purpose and use of the Instructional Objectives Guides is described in detail in Enclosure 1, attached, and should be studied carefully.

If the concepts of the Articulation Research Project are to be given a valid test, it is essential that the instructors use the Instructional Objectives Guides to determine and apply the minimum instructional objectives, skills (Process Objectives) and related technical information which must be taught to the learner to provide him with job proficiency in his chosen occupation. Instructional contact time allocations for the various instructional objectives are established for program planning purposes and represent the time estimated as required to teach the average learner to become occupationally proficient in performance of the task. The contact time allocations for the slow, but motivated, or the exceptionally able learners will of necessity be guided by the individual's needs. The performance standards as stated in the guide indicate the performance proficiency level the learner must demonstrate by the end of the course or program to be considered occupationally qualified and will be applied as the minimum performance standards for the program.

To determine the effectiveness of the articulated programs, it is essential that the occupational teachers/instructors concerned, at the high school level, as well as the guidance counselors, urge students interested in continuing their articulated occupational program beyond high school to attend James Sprunt Technical Institute. This is the only way that learners in the occupational programs can be assured of receiving credit at the post-secondary level for work successfully completed in high school, thus avoiding repetition of work completed or retesting. If such students fail to attend James Sprunt Technical Institute, there is no way of determining the effectiveness of the articulation program or to measure its benefits to the students and the community as a whole.

APPENDIX E

Instructors/teachers are expected to ensure that their instructional planning and preparation include as a minimum the instructional objectives and provision for the application of the performance standards contained in the instructional objectives guide for their program. The guides do not specify how a course is to be taught, but the emphasis should be on how to apply the processes and technical information to be learned. Theory should be limited to the essentials which the learner must know to meet instructional objectives.

Articulation Project instructors and guidance counselors at both levels of education are expected and encouraged to communicate with each other regularly and to develop a program of mutual assistance. Equipment requirements not available to all schools can, in some instances, be made available for instructional purposes by proper advanced coordination and planning between the instructors/teachers concerned.

Dixon S Hall

Dixon S. Hall, President
James Sprunt Institute

C H Yelverton

Charles H. Yelverton, Superintendent
Duplin County Public Schools

kbd

Inclosure - 1

Purpose of Instructional Objectives Guide

Copies to:

Chairman, Board of Trustees, James Sprunt Institute	1
Members, Board of Trustees, James Sprunt Institute	1 each
Chairman, Board of Education, Duplin County	1
President, James Sprunt Institute	1
Superintendent, Duplin County Public School System	1
Dean of Instruction, James Sprunt Institute	1
Assistant Dean of Instruction, James Sprunt Institute	1
Assistant Superintendent for Occupational Education, Duplin County Public School System	1
Director, Vocational Education, James Sprunt Institute (Vocational Education Programs Only)	1
Principals, Duplin County Public High Schools (4)	1 each
Guidance Counselors, James Sprunt Institute & Duplin County High Schools (5)	1 each
Instructors/Teachers for Occupational Program Concerned, James Sprunt Institute and Duplin County High Schools (5 or 17)	2 each
Occupational Advisors, Duplin Area Occupational Advisor & Program Committee (for program concerned) (5)	1 each
Area Occupational Education Director, State Department of Public Instruction, Jacksonville	1

NORTH CAROLINA EDUCATOR RESPONSES
TO
SURVEY REGARDING ARTICULATION CONCEPTS

The source is a random sample survey conducted in 1975-76 in support of a study titled "A Study of Concepts, Policies and Procedures to Accomplish Vocational-Technical Education Program Articulation Between Secondary Schools and Institutions of the Community College Systems of North Carolina", by Carlyle P. Woelfer, North Carolina State University, 1977.

Persons responding to the statewide survey included vocational education supervisors, guidance counselors and vocational education teachers at the secondary level of education from 21 different public school systems and their counterparts from the 11 different community colleges and technical institutes serving those systems. The teachers and instructors were primarily involved in the Automotive Mechanics, Business Education, Drafting and Health Occupations Programs.

The analysis of data derived from the responses to the statewide survey discussed above showed that more than 70% of the survey sample respondents agreed with each of the concepts which form the bases for this guide and are discussed in Part I, Introduction under the title "Articulation Concepts and Rationale". The percentages of the type of response received for each concept are shown below:

Concept	Agree	Disagree	Undecided
I	95.55%	00.00%	4.45%
II	74.83%	11.56%	14.61%
III	73.47%	17.01%	9.52%
IV	76.71%	5.58%	17.71%
V	70.07%	11.56%	18.37%

APPENDIX F

POLICIES AND PROCEDURES
FOR
LOCAL AREA OCCUPATIONAL QUALIFICATION EVALUATION

1. Purpose - To determine if students satisfactorily completing two or more blocks of vocational/occupational program instruction during the past school year can meet the business/industry standards of performance for job qualification, using the Occupational Advisory and Program Committee developed standardized test items in the program instructional objectives guides. This evaluation also determines transferability of secondary occupational course work for CC/TI credit. (See Appendix G-2.)

2. Who - Persons to be evaluated for job performance proficiency will be those high school students in articulated vocational programs who show occupational proficiency (passing, 77% or better) and have indicated interest in employment in the program occupation on leaving high school, or intend to enter advanced occupational instruction at the CC/TI level. A cross-section sample of program post-secondary students who are completing or have completed during the year those occupational courses common to the high schools should also be evaluated. (See Item 8.) CC/TI student participation is a quality control feature. Priority for evaluation of high school students should be given to those who are leaving high school by virtue of graduation or other valid reasons. The end of the high school year (May) will be the date for the normal evaluation of high school vocational students. High school students can be occupationally evaluated once a year, for instruction not previously evaluated, until all occupational course requirements have been met, or when the student leaves school. However, there can be exceptions made for such courses as typing and shorthand which are offered in 2-year blocks and can be adequately tested when the student is ready to leave school or has completed the second year of the instruction.

3. Evaluation for Occupational Qualification (Advanced Instruction) should consist of three phases or components:

   a. By the Vocational/Occupational Teacher/Instructor Evaluation - This part of the evaluation is based upon demonstrated general proficiency in class, attendance, attitude, reliability, work motivation and cooperation with the teacher and fellow students in task performance. Any teacher made test grades should also be considered in this phase of the evaluation. This score is normally combined with item 3(b) for a course grade.

   b. Task Performance Proficiency Evaluation at Home School - This phase is primarily the evaluation of the recognized occupational tasks in a block of instruction, using standardized test items and applying the performance standards. This evaluation will be performed by the teacher/instructor concerned. This is in recognition of the fact that it will be impossible to evaluate a student's occupational qualification fully at a central testing facility in the time that may be made available for such a purpose. This phase of the evaluation can be continuous throughout the period as the instruction is conducted on the instructional objective concerned. The course or semester grade is normally a combination of 3(a) and 3(b).

c. Joint Occupational Qualification Evaluation Conducted at a Centralized Testing Facility, Using Standardized Test Items and Performance Standards - This phase to be conducted at a central testing facility, by a joint evaluation team consisting of at least two occupational teachers/instructors (one high school teacher and one CC/TI instructor) for each articulation project program of instruction. The purpose of this phase is to cause the student to demonstrate to an impartial testing team that he/she is occupationally qualified to perform the tasks organic to blocks of instruction completed and to be certified accordingly. The performance evaluation will apply randomly selected test items from the standardized test items, within the limits of the instruction completed by the student, unless it is a "challenge" type evaluation. Test items will concentrate on primary tasks and where a complex task is involved, which required considerable completion time, the test may require performance of only a portion of the task. Oral and written responses to certain test items may also be considered, particularly where related technical information is concerned, or identification of certain components of an assembly or an inspection is required. (See Joint Phase, Enclosure 1.) (Appendix G-1)

d. The final occupational qualification for each block of instruction of the individual being evaluated may be determined by a total of the three evaluation phases weighted as follows:

1) Teacher/Instructor Evaluation (Home School) from 3(a), plus	
2) Teacher/Instructor Administered Task Performance Evaluation (Home School) from 3(b), as final grade	60%
3) Comprehensive and/or Applied Performance Centralized Testing Evaluation by Joint Test Team.	40%
	100%

This evaluation series is designed to validate job qualification and is not intended as a substitute for semester or quarter grades. Semester or quarter grades should, however, contribute to the teacher/instructor's evaluation phase. The student must achieve a combined score of 80% or better to be considered occupationally qualified in any one block or course of instruction.

4. Central Occupational Evaluation Facility - This facility should be centrally located to the institutions using it and have the best facilities and required equipment available to conduct the evaluation. (In most cases, this may be the local CC/TI. Selection of the CC/TI resources for this purpose would enhance articulation since it would further expose the high school students to the post-secondary institutions resources.)

5. Joint Occupational Evaluation Team - This team should consist of at least one high school teacher and one CC/TI instructor for the occupational program concerned. Where the size of the group being evaluated is large, or the test items require several test administrators, more than one high school teacher will be required. This team will set up and administer the test. The test items used will be those selected by the instructors of the area occupational program committee and should be representative of the major tasks of a block of instruction. The percentage value (based upon importance) of test items with relation to other test items in the evaluation should also be determined by the committee concerned. Student performance on each test item should be evaluated on the basis of "qualified" or "unqualified" to perform the task(s) concerned and meeting instructional guide performance standards stated in percentages.

6. Centralized Occupational Evaluation Administration Time - The centralized occupational evaluation should be conducted in blocks of 3 or 4 hours (AM or PM) on as many days as determined by the instructors concerned. Provision should be made for students to be excused from other school activities during their evaluation. These evaluations should be considered as important to the occupational student as the S.A.T. is to the college aspirant.

7. Certification of Job Level of Occupational Qualification - The student who achieves a final combined score of 80% or better, in each of the instructional blocks that collectively make up a recognized job will be issued a Local Area Certificate of Occupational Qualification, on leaving school. This certificate will state in standard industry/business/profession or D.O.T. recognized terms and titles the job level of performance successfully demonstrated by the student. The certificate of occupational qualification should be signed by the teacher and instructor(s) administering the test at the centralized testing facility and the home school occupational teacher. It will be authenticated for the Occupational Advisory and Program Committee concerned by the Executive Secretary of that committee. It is also desirable to issue all students who have been evaluated a list of the tasks completed for which performance standards have been met. (See Proposed Certificate of Occupational Qualification, Appendix H.)

   A record should be kept of students centrally evaluated who successfully have met required qualification standards for only one or more blocks of instruction but did not meet evaluation requirements for enough blocks (or were not tested) for qualification for a recognized job. Such students should receive credit for those blocks if enrolled at a CC/TI in the program. For students remaining in high school, such credits should be applied with work recognized the following year in determining job qualifications. All credits awarded should be made a matter of record at the CC/TI with that information also provided to high schools concerned (see Appendix H-1) and to the students. Those students who do not receive a certificate of job qualification but did earn transfer credits, should be given a letter that states credits earned. (See Appendix H-2.)

8. Testing of CC/TI Students - In view of the conflicts between spring quarter and spring semester completion dates and the difficulties that may be experienced in obtaining CC/TI student participation in centralized testing, it may be appropriate to evaluate the CC/TI students in those courses with subject matter common to the high schools during the conduct of regular instruction. The evaluation to include use of the same committee prepared test items and test procedures as will be or were used to evaluate the high school students during centralized testing. The results from the responses to those test items should be recorded and provided to the Executive Secretary of the Local Area Occupational Program and Advisory Committee concerned for use in preparing quality control statistics.

OCCUPATIONAL EVALUATION POLICIES, PROCEDURES AND RESPONSIBILITIES PLANNING MODEL

Joint Centralized Evaluation Phase

1. Establish date, time and place for each articulated program centralized evaluation.

   Responsibility: Assistant Superintendent for Vocational Education Local Area Public School System(s) (or equivalent).

   Dean of Instruction (or equivalent); local area CC/TI.

2. Designate teachers/instructors to participate.

   a. Minimum: 1 high school occupational teacher and 1 CC/TI instructor.

   b. Student to teacher/instructor ratio: 8 to 1 (may vary with Block Tested)

   Responsibility: High Schools - Assistant Superintendent for Vocational Education, Local Area Public School System(s), designates school(s) to provide teachers; school administrator designates individual(s).

   CC/TI - Dean of Instruction or other appropriate supervisor concerned with program to be evaluated.

3. Designate students to participate in the evaluation - (Limited to high school students with employment interests in occupation of the program or plan for advanced instruction and at least a cross-section of CC/TI students in common courses.) In both cases, the student to be evaluated must be eligible for evaluation based upon provisions of Appendix G.

   Responsibility: Teachers/instructors in program concerned, based upon information received through local school administrator or Department Head from Assistant Superintendent for Vocational Education, Assistant Dean of Instruction or Director of Vocational Education, or like supervisors.

4. Provide list of students to be evaluated and instructional blocks completed to evaluation team.

   Responsibility: Assistant Superintendent(s) for Vocational Education and Dean of Instruction (or equivalent) assisted by executive secretaries of the local area advisory and program committees concerned.

5. Preparation of Evaluation Plan Specifics to include:

    a. Selection of test items, from standardized listing;

    b. Provision of test item details to include item time allocations;

    c. Determination of equipment and facility requirements;

    d. Determination of test item sequence and method of evaluation (oral, written, identification and performance); and

    e. Determination of evaluation detail procedures (individual responsibilities of test administrators).

    Responsibility: Teachers(s) and instructor(s) designated to form program evaluation team.

6. Arrange for transportation of students to central evaluation facility.

    Responsibility: School administrator concerned, coordinated by Assistant Superintendent for Vocational Education Local Area Public School System(s) and CC/TI Dean of Instruction or designated person.

7. Suggested student evaluation load per evaluation period:

    a. Automotive - 15

    b. Business Education - 24

    c. Drafting - 15.

8. Provide the teacher evaluation of occupational qualification of students being evaluated at central testing facility to test evaluation team. (See Basic Guide Policies and Procedures for Local Area Occupational Qualification Evaluation - paragraph pertaining to occupational evaluation, Appendix G-1.)

    Responsibility: Individual teachers/instructors concerned through local school administrator in time for evaluation. (This should be submitted with student's name, if possible.)

9. Exercise general supervision and coordination of centralized evaluation team and centralized testing phase.

    Responsibility: Executive Secretary of the Local Area Program and Advisory Committee concerned with the occupational program in which students being tested are enrolled.

10. Arrange for equipment and test facility availability and preparation based upon requirements determined by centralized testing team in paragraph 5 above.

Responsibility: Occupational education supervisor exercising supervision over facility designated, the occupational teacher/instructor normally charged with the facility and equipment. Preparation of facility to be performed by test team personnel, assisted by facility instructor if not part of test team, coordinated by Executive Secretary of Advisory and Program Committee concerned.

11. A Suggested Procedure to Determine Student Test Item Assignment - Vocational/occupational teachers/instructors will prepare sufficient test items to test students in the time allocated, on each block of instruction completed since last tested. If not previously tested, those blocks of instruction completed during the school year will be tested. Test items should be designed to be completed in relatively short periods. (Multiples of 10 minutes are recommended.) To reduce the chance for compromise and to permit station-type testing to expedite testing, test items for each block should be numbered and grouped according to allocated completion time. Slips of paper with test item number and sequence of testing for that item will then be placed in containers and the student directed to draw the appropriate number of slips from the various block groups. The numbers drawn will then be the test items to which the student responds and sequence of response.

12. Test Items for Centralized Testing - The planning committee for the centralized testing phase should be made up of necessary representatives from each participating institution in the program concerned. The committee as a group should select the test items outlines from the appropriate blocks of the instructional objectives guide per paragraph 11 above. The joint evaluation test items should then be prepared by the committee. Each item should be reviewed by the committee for validity and reliability. Following preparation of test items, they should be given to the executive secretary of their advisory and program committee for review, necessary reproduction and safekeeping until test day(s).

13. Grading of Test Results and Calculation of Qualification Scores - Following each day's testing, test team personnel should grade test items administered. If possible, qualification scores should be calculated at this time based upon Paragraph 3, Appendix G. Results should be given to the committee's Executive Secretary.

14. Preparation of Occupational Qualification Certificates - Responsibility of the committee's Executive Secretary. (See Paragraph 7, Appendix G.)

RATIONALE FOR CENTRALIZED EVALUATION
FOR
JOB QUALIFICATION

Centralized evaluation for occupational program students for job qualification and advanced program credit is appropriate as an element of the articulation process. With the support and efforts of all concerned, the following benefits can result from centralized evaluation:

1. The student is evaluated by competency based test items simply for ability to meet job qualification standards in occupational work completed and is not in competition with other students.

2. Evaluation is based upon student ability to respond to standardized test items that relate to key job tasks and are selected from test items in the program instructional objectives guide. Test items are designed to meet both applicatory and cognitive task requirements. Performance standards are those recognized by the occupation for the job task concerned.

3. The centralized evaluation test items are prepared for administration, reviewed for adequacy, and responses graded by the joint efforts of vocational/occupational teachers/instructors of the articulated program concerned. The results should be better test items and test administration than normally can be done by one individual. The foregoing also helps to validate acceptance of evaluation results by the post-secondary occupational instructors, when a student presents high school earned job qualifications for advanced standing credit in a post-secondary program.

4. By demonstrating job qualification through centralized testing, high school students simultaneously demonstrate their qualification to receive advanced program credit for same, without further testing, if they enroll in the program at the post-secondary level - the purpose of articulation.

5. Centralized testing helps to determine if all vocational teachers and occupational instructors are following the instructional objectives guide for their program in the same block of instruction. That practice ensures that the same tasks are taught and the same performance standards applied - again, articulation.

6. Centralized testing provides the opportunity to award the successful student with a standard, area recognized, joint certificate of occupational qualification which states the job qualification(s) demonstrated by the student in terms having personnel management significance. The certificate is issued by the occupational advisory and program committee conducting the evaluation. Since this is a joint educational area activity with advisor participation, it should have more credibility than the average institutional diploma or certificate.

APPENDIX G- 2

7. Provides a valid basis for administrators to evaluate the quality of occupational instruction as well as student ability in articulated programs presented in the institution(s) for which they have administrative responsibility. This is a demonstration of accountability. It also helps to ensure that adequate resources are provided to support the program.

8. Properly conducted, centralized evaluation can serve as a workshop for all involved to improve testing procedures.

Do not confuse centralized job qualification evaluation with course grades and credits awarded the student by home school classroom teachers. Centralized testing is annual and normally involves all courses or blocks of instruction completed by the student during the year, or all blocks of instruction in which not previously evaluated by centralized action. It is not intended as a substitute for final examinations. The home school teacher could use some appropriate elements of centralized testing results, if such was planned, as contributing to final grades for the spring semester or quarter when there is a question of passing or failing a course. The designation of "job qualified" in a specific block of instruction is the result of a composite score that is based upon two independent evaluations. The first evaluation is that performed by the home school occupational teacher during the conduct of daily instruction in the block evaluated. The second evaluation is the result of the centralized testing conducted by a joint-test team of secondary and post-secondary teachers.

APPENDIX H

Certificate of Job Qualification

THIS IS TO CERTIFY THAT

June Hanchey,

Has satisfactorily completed Blocks 1.0, 2.0, 2.5, 4.0 and 5.0 (See reverse side) articulated blocks of instruction in the Business Education program, conducted at Wallace-Rose Hill High School, and has met performance standards required for qualification as a: File Clerk, Clerk-Typist, Clerk-General.

OFFICIAL:

Date: May 12, 1977

For The Duplin Area Business Education Advisory and Program Committee

By: Thomas Hall
Committee Executive Secretary
Assistant Dean of Instruction
James Sprunt Institute

Home School Teacher(s):

Laura C. Kenan
Wallace-Rose Hill High School

Evaluation Team Members:

Laura C. Kenan
Wallace-Rose Hill High School

Catherine Register
James Sprunt Institute

Herman Kight
James Sprunt Institute

SEAL
JAMES SPRUNT INSTITUTE

SEAL
DUPLIN COUNTY SCHOOLS

Hanchey, June
Wallace-Rose Hill High School
May 1977

Credit without further testing in the appropriate Business Education programs will be given at James Sprunt Institute, Kenansville, North Carolina for the instructional blocks and course numbers listed below, if enrolled during the school year 1977-1978 or the school year following completion of the Business Education program at the secondary level.

Block 1.0	Personal Development	HYG 101	Q - 96
Block 2.0	Basic Typing	BUS 102,103	
Block 2.5	Filing	BUS 112	Q - 98
Block 4.0	Business Machines (Reproduction)	BUS 212	Q - 95
Block 5.0	Advanced Typing	BUS 104,205	Q - 95

Q - Qualification Score

13 May 1977

The students listed on the attached sheet have participated in the Duplin Area centralized Testing Program for job proficiency in Business Education subjects. They have demonstrated ability to meet job proficiency performance standards in the articulated program blocks of instruction shown after their name, but have not been tested in sufficient subject areas to be identified as qualified for a specific job recognized in the Dictionary of Occupational Titles (D.O.T.). They will not be issued a Duplin Area Job Qualification Certificate at this time. These evaluation results will be recognized as evidence of articulated instructional blocks satisfactorily completed and will be utilized together with future (1977-1978) centralized testing reports to determine job qualification. In addition, full credit without additional testing will be given by James Sprunt Institute in these subjects under the following conditions:

A. The student enrolls in one of the articulated business programs during the school year 1977-1978 or;

B. The student enrolls in one of the articulated business programs following completion of their current high school business education program.

A copy of this report will be kept on file in the Office of the Registrar, James Sprunt Institute.

Thomas Hall

Thomas Hall, Executive Secretary
Duplin Area Business Education
Advisory and Program Committee

APPENDIX H-1

LETTER OF AWARD

DUPLIN COUNTY PUBLIC SCHOOLS JAMES SPRUNT INSTITUTE

May 25, 1978

Your participation in the Articulation Testing Program between Duplin County Public Schools and James Sprunt Institute was significant to the educational progress in our county and is sincerely appreciated.

We are pleased to inform you that your test scores indicate that you are eligible for advanced placement in the following area(s):

Should you elect to enroll at James Sprunt Institute to pursue studies leading to a degree in Business Education, you will be awarded credit for the following courses:

These courses are also applicable to any Job Qualification Certificate for which you might be eligible.

Congratulations on your accomplishments and best of luck in all future endeavors.

Sincerely,

Lloyd Stevens
Assistant Superintendent
Duplin County Public Schools

Jess Outlaw, Director
Vocational/Technical Education
James Sprunt Institute

LS:JO/kd

Shown below is the Occupational Task Performance Record Card. It is printed on 16" x 3 3/4" manila card stock. The card has been bisected to show here.

SAMPLE - OCCUPATIONAL TASK PERFORMANCE RECORD CARD (FRONT)

Block 0.00 Introduction to Automotive Technology

high school = 180 hours
cc/ti = 176 hours

0.10 Shop Operation and Safety

- ____ L M S Know and practice shop safety.
- ____ L M S Know first-aid requirements for normal shop hazards.
- ____ L M S Identify, use properly, and maintain common hand tools.
- ____ L M S Identify, use properly, and maintain items of common shop equipment.
- ____ L M S Identify, use properly, and maintain items of common use shop machinery.
- ____ L M S Know performance requirements of standard shop operating procedures.

0.20 The Motor Vehicle: Assembly Identification, Assembly and Vehicle Mechanical Operation and Driver Maintenance

- ____ L M S Know types, purpose, application, and care of lubrication and tires.
- ____ L M S Know purpose, operation, major parts, and care of cooling system.
- ____ L M S Know purpose, operation, major parts, and care of automobile heater.
- ____ L M S Know purpose, operation, major parts, and care of braking system.
- ____ L M S Know purpose, types of fuel, system operations, major parts, and care of fuel system.
- ____ L M S Know purpose, operations, major parts, and care of steering system and front end.
- ____ L M S Know purpose, operations, major parts, and care of power train and manual transmission.
- ____ L M S Know purpose, operation, major parts, and care of engine.
- ____ L M S Know purpose, operation, major parts, and care of automobile air conditioners.
- ____ L M S Know purpose, operation, major parts, and care of automatic transmission.
- ____ L M S Know purpose, operations, major parts, and care of automotive electrical systems.

0.30 The Automotive Technician

- ____ L M S Know opportunities and job availability for the automotive technician.
- ____ L M S Know how to get a job, hold a job, and earn advancement.
- ____ L M S Know how to meet people and to be accepted by fellow employees.
- ____ L M S Know the technician's responsibilities toward his employer, the customer, and his craft.

Block 1.00 Lubrication and Vehicle Operating Maintenance

high school = 25 hours
cc/ti = 25 hours

- ____ L M S Changes oil and filters.
- ____ L M S Lubricates vehicles and equipment.
- ____ L M S Removes, repairs or replaces tires, and maintains equipment.
- ____ L M S Winterizes vehicles.

Block 2.00 Cooling System Maintenance and Repair

high school = 30 hours
cc/ti = 30 hours

- ____ L M S Checks coolant freezing point.
- ____ L M S Inspects and replaces water hoses.
- ____ L M S Pressurizes and inspects coolant system.
- ____ L M S Tests and replaces thermostat.
- ____ L M S Checks overflow tank and accessories.
- ____ L M S Removes and reinstalls radiators.
- ____ L M S Chemically cleans and flushes cooling system.
- ____ L M S Replaces water pump.
- ____ L M S Replaces freeze plugs.

Block 3.00 Automobile Heater Maintenance and Repair

high school = 30 hours
cc/ti = 30 hours

- ____ L M S Inspects and replaces defroster hose.
- ____ L M S Services heater control components.
- ____ L M S Replaces heater water control core.
- ____ L M S Services or replaces circulating heaters.
- ____ L M S Diagnoses heating system malfunctions.

Block 4.00 Braking System Maintenance and Repair

high school = 60 hours
cc/ti = 66 hours

- ____ L M S Adjusts brakes.
- ____ L M S Adjusts hand brake linkage.
- ____ L M S Frees up parking brake cables.
- ____ L M S Replaces hand brake linkage.
- ____ L M S Bleeds brakes.
- ____ L M S Inspects, repairs or replaces self adjusters.
- ____ L M S Replaces brake hoses and lines.
- ____ L M S Inspects and replaces brake pads (disc brakes).
- ____ L M S Inspects and replaces brake shoes.
- ____ L M S Inspects and turns rotor if necessary (disc brakes).
- ____ L M S Inspects and turns brake drums.
- ____ L M S Repairs or replaces wheel cylinder.
- ____ L M S Repairs or replaces master cylinder.
- ____ L M S Repairs or replaces hydraulic power cylinders and valves.
- ____ L M S Performs operational brake inspections.

Block 5.00 Fuel System Maintenance and Repair

high school = 55 hours
cc/ti = 55 hours

- ____ L M S Inspects, services, or replaces carburetor air cleaner.
- ____ L M S Cleans or replaces fuel filter units.
- ____ L M S Removes, services, or replaces fuel lines and hoses.
- ____ L M S Installs carburetors.
- ____ L M S Inspects and measures fuel flow and pressure of system.
- ____ L M S Adjusts carburetor.
- ____ L M S Inspects, cleans and adjusts choke unit (automatic and manual).
- ____ L M S Inspects, services, or replaces gas tank, cap and sending unit.
- ____ L M S Repairs and services carburetors.
- ____ L M S Repairs or services exhaust emission control system, to include manifold heat.
- ____ L M S Analyzes fuel injection problems by means of electrical diagnostic equipment.
- ____ L M S Performs operational inspections of exhaust emission control system.

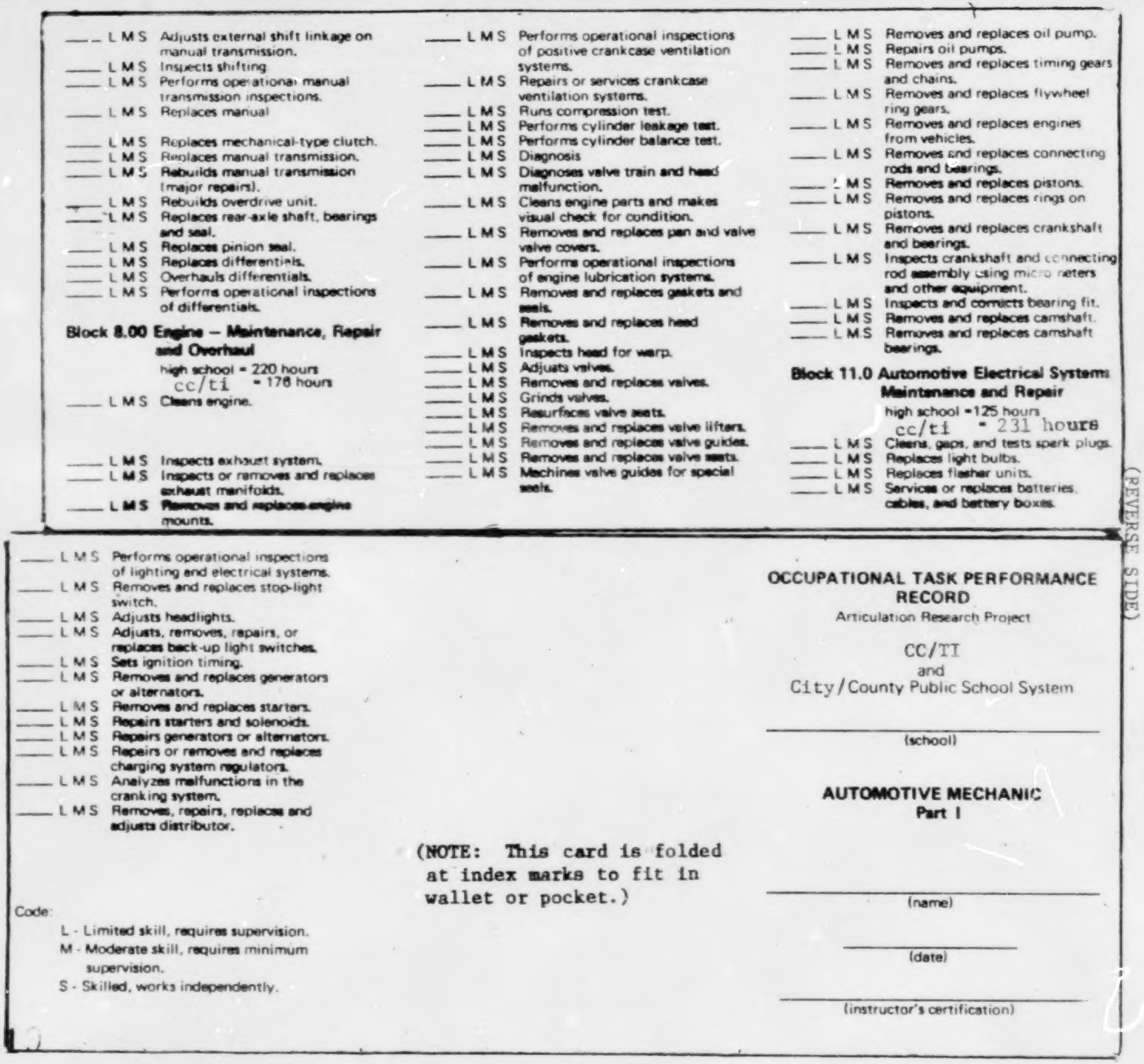
Block 7.00 Drive Train and Manual Transmission

high school = 165 hours
cc/ti = 165 hours

- ____ L M S Lubricates U-joints.
- ____ L M S Lubricates speedometer cable drive gear and housing.
- ____ L M S Repairs or replaces slip-joints or U-joints.
- ____ L M S Replaces drive-line seals.
- ____ L M S Tests and replaces out-of-round drive shaft.
- ____ L M S Inspects drive shafts, U-joints and center bearing.
- ____ L M S Replaces manual transmission gaskets and seals (in-car repairs).
- ____ L M S Replaces pilot bearing.
- ____ L M S Replaces throwout bearings.
- ____ L M S Replaces transmission mounts.
- ____ L M S Adjusts mechanical-type clutch.

NOTE: Part II contains the program blocks of qualification instruction normally taught by CC/TI only.

APPENDIX I



___ L M S Adjusts external shift linkage on manual transmission.
___ L M S Inspects shifting.
___ L M S Performs operational manual transmission inspections.
___ L M S Replaces manual
___ L M S Replaces mechanical-type clutch.
___ L M S Replaces manual transmission.
___ L M S Rebuilds manual transmission (major repairs).
___ L M S Rebuilds overdrive unit.
___ L M S Replaces rear-axle shaft, bearings and seal.
___ L M S Replaces pinion seal.
___ L M S Replaces differentials.
___ L M S Overhauls differentials.
___ L M S Performs operational inspections of differentials.

Block 8.00 Engine — Maintenance, Repair and Overhaul
high school = 220 hours
cc/ti = 176 hours

___ L M S Cleans engine.
___ L M S Inspects exhaust system.
___ L M S Inspects or removes and replaces exhaust manifolds.
___ L M S Removes and replaces engine mounts.
___ L M S Performs operational inspections of positive crankcase ventilation systems.
___ L M S Repairs or services crankcase ventilation systems.
___ L M S Runs compression test.
___ L M S Performs cylinder leakage test.
___ L M S Performs cylinder balance test.
___ L M S Diagnosis
___ L M S Diagnoses valve train and head malfunction.
___ L M S Cleans engine parts and makes visual check for condition.
___ L M S Removes and replaces pan and valve valve covers.
___ L M S Performs operational inspections of engine lubrication systems.
___ L M S Removes and replaces gaskets and seals.
___ L M S Removes and replaces head gaskets.
___ L M S Inspects head for warp.
___ L M S Adjusts valves.
___ L M S Removes and replaces valves.
___ L M S Grinds valves.
___ L M S Resurfaces valve seats.
___ L M S Removes and replaces valve lifters.
___ L M S Removes and replaces valve guides.
___ L M S Removes and replaces valve seats.
___ L M S Machines valve guides for special seals.
___ L M S Removes and replaces oil pump.
___ L M S Repairs oil pumps.
___ L M S Removes and replaces timing gears and chains.
___ L M S Removes and replaces flywheel ring gears.
___ L M S Removes and replaces engines from vehicles.
___ L M S Removes and replaces connecting rods and bearings.
___ L M S Removes and replaces pistons.
___ L M S Removes and replaces rings on pistons.
___ L M S Removes and replaces crankshaft and bearings.
___ L M S Inspects crankshaft and connecting rod assembly using micrometers and other equipment.
___ L M S Inspects and corrects bearing fit.
___ L M S Removes and replaces camshaft.
___ L M S Removes and replaces camshaft bearings.

Block 11.0 Automotive Electrical Systems Maintenance and Repair
high school =125 hours
cc/ti = 231 hours

___ L M S Cleans, gaps, and tests spark plugs.
___ L M S Replaces light bulbs.
___ L M S Replaces flasher units.
___ L M S Services or replaces batteries, cables, and battery boxes.
___ L M S Performs operational inspections of lighting and electrical systems.
___ L M S Removes and replaces stop-light switch.
___ L M S Adjusts headlights.
___ L M S Adjusts, removes, repairs, or replaces back-up light switches.
___ L M S Sets ignition timing.
___ L M S Removes and replaces generators or alternators.
___ L M S Removes and replaces starters.
___ L M S Repairs starters and solenoids.
___ L M S Repairs generators or alternators.
___ L M S Repairs or removes and replaces charging system regulators.
___ L M S Analyzes malfunctions in the cranking system.
___ L M S Removes, repairs, replaces and adjusts distributor.

Code:
L - Limited skill, requires supervision.
M - Moderate skill, requires minimum supervision.
S - Skilled, works independently.

(NOTE: This card is folded at index marks to fit in wallet or pocket.)

OCCUPATIONAL TASK PERFORMANCE RECORD
Articulation Research Project
CC/TI
and
City/County Public School System

____
(school)

AUTOMOTIVE MECHANIC
Part I

____
(name)

____
(date)

____
(instructor's certification)

SAMPLE – OCCUPATIONAL TASK PERFORMANCE RECORD CARD
(REVERSE SIDE)

NOTE: This card is primarily for the student to maintain a record of his progress as well as to show tasks to be mastered. The instructor can also keep a card for daily record purposes. It is a copy of Task Inventory.

OCCUPATIONAL TRADE FAIRS

A vehicle to serve as an information activity relating to occupational programs for the community as a whole, to include students, the family, teachers of all levels and subjects and business and industry is an occupational trade fair. This activity should involve the joint effort of all levels of career exploration and occupational instruction from junior high school through the post-secondary community college or technical institute. To show the terminal objectives of the occupational programs, the business, industrial (to include agriculture), and professional activities of the area should be included to provide a complete display. Participation of such activities will also serve to make them more aware of the occupational education programs conducted and their potential.

The guidance counselors from both secondary and post-secondary levels should also participate since they can and should play a key role in articulation. The local area Employment Service Commission can support the guidance counselors. The regular Armed Services, local National Guard units, and other governmental agencies that capitalize upon the use of occupational and academic education output or provide such training, should be included. In addition, nearby community colleges and technical institutes and senior colleges should be asked to participate with informational action or related displays pertaining to career clusters for which no programs are operational in the sponsoring local area.

The junior high school, high school and post-secondary (community college/technical institute) displays should show each exploratory and occupational program conducted, employing live action displays with students participating. Displays should be highly organized by occupational clusters or programs leading from the exploratory programs through each educational level to the occupation (the employer), as opposed to each school having all of its activities in a group. Within the occupational family, each participating school should display by joint agreement a phase of the total program so that the group of displays runs progressively from the career cluster exploratory to the advanced instructional phase, without duplication of activity, ending in the vicinity of the occupational employer's exhibit. See attached schematic on proposed layout. The exploratory display should emphasize the occupations in the career cluster. (See Appendix J-1 .)

The career cluster employer's exhibit should list and emphasize the types of job skills they employ and the average salaries paid and the progression of advancement. Such displays should also permit the showing of primary products or services where appropriate. Sales activities by exhibitors are not considered appropriate under these conditions.

The displays of each school should be separated from the others by some form of partition. Most displays can be accommodated in spaces from 8' x 8' to 8' x 16' of floor space. Electric lighting, power outlets and vertical surfaces are needed for the average displays. Commercial exhibits on the periphery of the school displays should be allowed more space, ie: 15' x 15' to 15' x 30'.

Arrangements for food service are required and often will be done by local service clubs or like organizations. Adequate toilet facilities are required.

A tobacco sales warehouse has been found very satisfactory for this type activity if large (minimum 175' x 200') civic centers, etc., which permit vehicles on the floor, are not available. Ample space permits better displays. Parking space and traffic control must be adequate.

High school bands playing in concert can contribute a festive air to the event.

The Fair can be successfully conducted from 12:00 noon to 8:00 p.m. A Friday (April) afternoon was found appropriate. The target audience is the whole community, with emphasis upon the 6th to 10th grade students and their parents who are in the career discussion and interest period.

At least a day and a half should be allowed for set-up of displays. Two to three days, in advance of display set-up, are required to erect partitions and prepare electrical wiring, if such are not readily available. A full day for removal of displays, equipment and clean-up is also required. Student labor groups should be organized in advance to handle the many projects.

A "Fair Board" or "Steering Committee" is required for policy and guidance requirements. It should consist of senior local administrators from both educational systems, with representation from local area business and industrial activities. Personnel from the local area Occupational Education Advisory Council are highly desirable as participants.

The local area business associations or service clubs should set up a "fair business/industry exhibitor coordinating committee" to arrange for and coordinate commercial, industrial, service and professional participation, or this sector may default. The commercial, industrial, business support desired can be initially determined by instructoss.

A fair operations and coordinating committee, to include public relations personnel from the local educational activities, is needed. This committee should be charged with actual preparation for and conduct of the fair. It must be a joint committee and requires energetic, innovative supervisory personnel. The days surrounding the fair will find this committee involved full time.

Long-range planning and financial support is essential for a successful fair. Failure to provide for lead time and follow-up in the business and industry sector as well as school displays, can cause these areas to make a poor showing.

Police, Fire and Emergency services can be readily provided by inviting such local activities to participate as part of the Public Service cluster displays.

This type fair involves much effort and may be best conducted every two years to be most effective. Since the primary audience is the total community, there is little to be gained by consolidating into Regional Fairs if the purpose is to show the potential students and the community what occupational programs are available in the area.

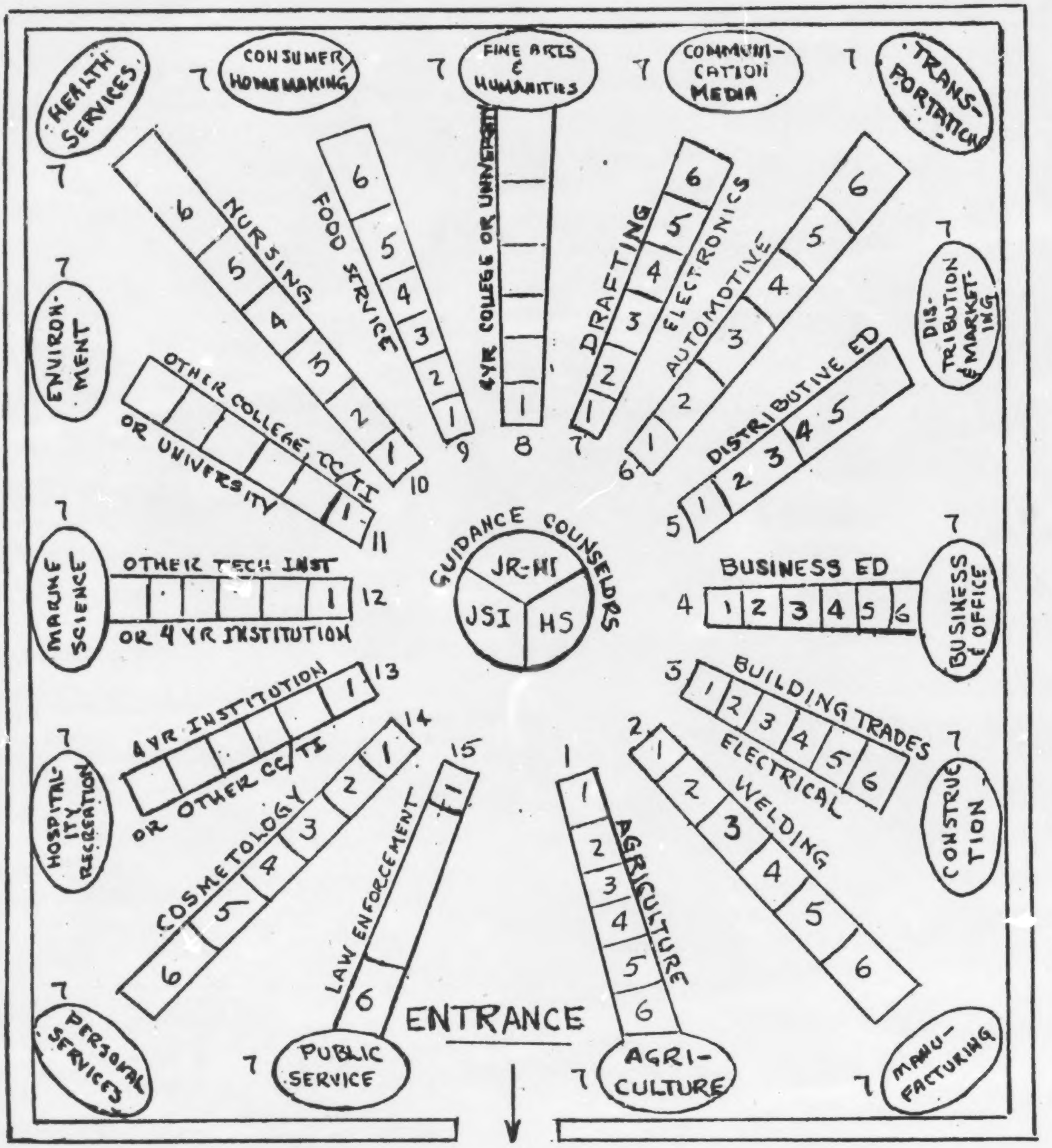
A major publicity campaign, starting about one month in advance and employing all available communication media, is essential to the success of the fair. A special target audience is the junior high school student. A hand bill given to all Duplin County Public School children is attached. (See App. J-2.)

Invitations to educational activities out of the local area and to business and industry organizations, signed by the post-secondary institution president and secondary school system(s) superintendent(s) are appropriate.

It can be seen that participation in this type activity is articulation in every respect and is an added benefit. During the progress of the fair, instructors and supervisors should visit with others in their occupational area as well as with the employer representatives to become better acquainted and to see how other programs are handled.

DUPLIN COUNTY OCCUPATIONAL TRADE FAIR

DISPLAY LAYOUT


HEALTH SERVICES
CONSUMER HOMEMAKING
FINE ARTS & HUMANITIES
COMMUNICATION MEDIA
TRANSPORTATION
DISTRIBUTION & MARKETING
BUSINESS & OFFICE
CONSTRUCTION
MANUFACTURING
AGRICULTURE
PUBLIC SERVICE
PERSONAL SERVICES
HOSPITALITY RECREATION
MARINE SCIENCE
ENVIRONMENT
NURSING
FOOD SERVICE
4YR COLLEGE OR UNIVERSITY
DRAFTING
ELECTRONICS
AUTOMOTIVE
DISTRIBUTIVE ED
BUSINESS ED
BUILDING TRADES
ELECTRICAL
WELDING
AGRICULTURE
LAW ENFORCEMENT
COSMETOLOGY
4YR INSTITUTION OR OTHER CC/TI
OTHER TECH INST OR 4 YR INSTITUTION
OTHER COLLEGE, CC/TI OR UNIVERSITY
GUIDANCE COUNSELORS
JR-HI
JSI
HS
ENTRANCE
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15

DISPLAY LEGEND:

1- JR. H.S. CAREER CLUSTER EXPLORATION DISPLAY
2- H.S. VOCATIONAL PROGRAM(1st Sem.) DISPLAY
3- H.S. VOCATIONAL PROGRAM (2d Sem.) DISPLAY
4- H.S. VOC. PROG.(3d Sem.) DISPLAY
5- H.S. VOC. PROG.(4th Sem.) DISPLAY
6- TECH INST. VOC/TECH ADV DISPLAY
7- BUS/INDUSTRY COMMERCIAL DISPLAY

WHAT

WHERE

WHEN

Dear Parent,

You are invited to attend
What: the Duplin Area Occupational Trade Fair
Where: Sheffield's Warehouse, N.E. Railroad Street, Wallace, North Carolina
When: Friday, April 2, from 1-9 p.m.

You have no doubt thought about career choices your children are going to make. Perhaps you have thought about other career possibilities for yourself. In either case, you will want to mark April 2 on your calendar as the day to attend the Duplin Area Occupational Trade Fair.

WHAT'S IT ALL ABOUT ?

The Trade Fair will feature displays representing occupational programs offered by Duplin County Public Schools and at least ten Eastern North Carolina Technical Institutes, Community Colleges, and four-year universities. These displays will be manned by students and instructors who will discuss, and in many cases, provide a demonstration of a particular occupational task. Displays featured will include Business Education, Building Trades, Cosmetology, Marine Science, Fine Arts and Humanities, and many more. Representatives from the Armed Forces and local National Guard Units will also man booths to discuss the career training they offer.

WHY A TRADE FAIR ?

The purpose of this Trade Fair will be to publicize to students, the general public, and potential employers the occupational training programs offered in Duplin County and surrounding counties. It is cooperatively sponsored by James Sprunt Institute, Duplin County Public Schools, and area businesses and industries.

EXHIBITS

We think that you will find the 'wagon wheel' layout unique and easy to follow. Exhibits comprising each spoke in the wheel follow a sequential progression from early training to occupational employment.

As you browse through the various occupational program displays you may enjoy—

MUSIC provided by the East Duplin, James Kenan, North Duplin, and Wallace-Rose Hill High School District Bands and the Departments of Music, the University of North Carolina at Wilmington and East Carolina University.

and

REFRESHMENTS and PLATE DINNERS throughout the day served at a nominal charge.

so

We encourage you and your entire family to attend the Fair. Admission is FREE. We believe that you will find the Duplin Area Occupational Trade Fair educational, informative, and entertaining.

ADVISORY AND PROGRAM COMMITTEES

A. Local Area Committees

1. Functions of Executive Secretary Should Include:

   a. Providing necessary administrative support for committee, such as typing, prepare correspondence, serve as office of record, do necessary reproduction, record committee meetings, make travel vouchers for committee members, prepare committee budget, etc.

   b. Providing necessary logistical support, ie: office supplies, arrange for facilities for committee meetings.

   c. Handling committee correspondence for committee chairperson.

   d. Authenticating local area certificates of occupational qualification.

   e. Arranging for committee meetings with concurrence of committee chairperson.

   f. Arranging for committee review of state proposed changes to curriculum of interest and program instructional objectives guide.

   g. Initiating action with craft advisors and teachers/instructors for craft advisor replacements as necessary. Arranging for joint approval, letters of invitation and appointment.

   h. Submitting names of a local area craft advisor and/or vocational teacher/occupational instructor for the state advisory and program committee, based upon committee selection and appropriate local administrator approval.

   i. Keeping the committee members informed regarding items of committee interest.

   j. Arranging and coordinating centralized testing phase of evaluation of program students. Obtaining necessary test items from teachers/instructors.

2. Committee Operations Include:

   a. Meeting at regular intervals to discuss program, changes, problems, and job opportunities versus student input to program. (Meet at least annually, but preferably twice a year--fall and spring.)

   b. Reviewing all program material developed by the state committee and determining response(s).

APPENDIX K

c. Electing a craft advisor, a secondary member vocational teacher and a post-secondary member occupational instructor for regional nominees as members of state advisory and program committee.

d. If the program is unique to the local area and has no counterpart elsewhere in the state, performing necessary actions to develop an instructional objectives guide as the state committee for the program.

B. State Advisory and Program Committees

1. Qualification of Nominees for State Advisory and Program Committee:

a. Teachers/Instructors - Best qualified based on technical experience, formal education and highly recommended as an instructor. Should provide for a cross-section of occupational experience to ensure that some members have recent work experience or refresher training in occupation related to program.

b. Occupational (Craft) Advisors - Fully qualified from a technical standpoint with several years work experience at the top skill level. Have good reputation in the state association for business or industry and acceptable as a spokesperson for that occupation.

2. Selection of Members (Large Programs):

a. Select one secondary instructor from nominees from local area committees in each educational planning region.

b. Select one post-secondary instructor from nominees from local area committees in each educational planning region.

c. Select one craft advisor from nominees from local area committees in each educational planning region.

d. Select vocational/occupational education staff person from either state educational department using a joint committee set up to appoint occupational consultants and curriculum specialists from the state staffs to advisory and program committees. The individual should be placed on those committees which are in or related to that person's primary area of occupational program interest. A large number of programs and relatively small number of occupational staff personnel will require most to serve on more than one advisory and program committee.

e. The committee members should elect a chairperson from among the teachers/instructors.

3. Tenure of Members - Initially members should be appointed for one, two and three years to provide for regular change of committee members and to preclude capture of the committee by special groups. New appointments should be sought by the executive secretary from local area committees. It may be desirable to preclude a member from self-succession, by requiring a break in tenure of at least one year. (For craft advisors, this is a case-by-case consideration if they are effective and if other qualified persons are not available.)

4. Craft Advisors Utilization - A primary function of craft advisors is to assist in job analysis or validate the task listing or inventory to be used by the program and the initial entry performance standards to be applied to the tasks for occupational qualification. Several sources now publish task inventories. Craft advisors should also determine task frequency and experience level of worker normally expected to perform the task. Craft advisors should be requested to review drafts of proposed instructional objectives guides for adequacy as a guide to development of occupationally qualified persons. Tool and equipment lists should also be reviewed by craft advisors.

5. Utilization of Vocational/Occupational Teachers/Instructors on State Committees - The teachers/instructors on state advisory and program committees should have the function of developing the instructional objectives guide for their program, based upon standardized task listings and performance standards which were developed with the assistance of craft advisors.

6. Timing of State Committee Meetings - Those meetings involving program development should be conducted after the end of the secondary school year to provide vocational teachers the opportunity to meet for several days without missing school or paying a substitute. As a rule, advisors should not be requested to meet for more than one day at a time in any one week. Post-secondary instructors should not be required to meet for more than two consecutive 8-hour days per week if they are also teaching.

7. Executive Secretary Functions for State Committee Include:

   a. Providing committee administrative support to include an office of record, typing, notifications of meetings, preparing and submitting committee budget, preparing necessary travel and subsistence vouchers.

   b. Providing or arranging logistical support to include: reproduction of committee-developed products, meeting facilities, office supplies, mail out final products of committee.

c. Arranging coordination of committee products with appropriate staff personnel in the Department of Public Instruction and the Department of Community Colleges.

d. Sending committee products to local area committees for review and comment prior to publication. Responses could be requested from a limited number of local committees. (Could employ a random sample technique to determine who responds.) To prevent loss of local area support and interest, those local committees not asked to respond should not be precluded from so doing, if they choose to comment.

e. Coordinating with the committee chairperson to arrange committee meetings. (On occasions committee business, particularly with advisors, may be adequately conducted by mail.)

f. Requesting nominations for state committee membership from local area committees.

g. Pending organization of initial committee submit recommended membership to both State Department administrators for approval. Once members are selected, the State Board of Education or by joint action, state level educational administrators should be requested to make such appointments official. Once the committee is operational, the members should choose replacements from nominees and then submit same for final approval and appointment as provided initially.

h. Serving as editor of committee products or arranging for such services.

8. Those educational regions having no local area committees in a specific program would not be expected to participate in state committee activities.

9. To preclude inefficient use of personnel and to reduce costs, where development activities can be performed by smaller groups than the full committee, subcommittees should be established by committee action to handle situation, while ensuring sufficient secondary and post-secondary participation.

10. Organization of Committees for Small Programs Having Limited Participation - For those programs of instruction peculiar to one (or two) community colleges/technical institutes, the local institution advisory committee, to include the instructor(s), would also constitute the state advisory and program committee. If any high schools in the state, regardless of location, also conduct that program, it would be appropriate to include their instructors and selected advisors as part of the state committee.

11. State Committees for Programs Having No Secondary Participation - For occupational programs which are taught only at the post-

secondary level, a local area advisory committee should be established without secondary level participation, with the possible exception of secondary guidance counselors. A state level committee would be made up of representatives from the advisory and program committees of the post-secondary institutions that conduct the program.

SAMPLE

James Sprunt Institute
Request for Advanced Standing Proficiency Examination for Occupational Program Course Credit

It is the policy of this institution to permit applicants for occupational program enrollment, who do not have articulated program certificates of occupational competency, to request examination (challenge) for advanced credit for occupational courses (instead of taking the course(s)) which are components of their program of interest. It is the responsibility of the applicant to prove that he should be tested. Justification for such action would include one of the following:

1. Successful completion of a like course or program of instruction in high school,
2. Successful completion of a like course or program of instruction in an armed forces service school or training activity which included the course content and provided the course objective competencies,
3. Has had work experience, to include the U. S. Armed Services, which required performance of at least 90% of the tasks contained in the job task listing for the course(s) under consideration resulting in development of the course objective competency.

Normally there is no limit to the number of courses you can challenge. A successful challenge results in full course hour credit, but grades and quality points are not awarded in such cases. The benefit to you is that you do not have to take the course if you are successful and you can complete the program sooner or take other courses of interest.

The course (instructional block) task listings for articulated programs are contained in the Occupational Task Performance Record Card available with this form and/or in the Instructional Objectives Guide for your program of interest, on hand at the counselor's office and the course instructor's office. For non-articulated programs it will be necessary to review course objectives. It will be the responsibility of the department/instructor for your program of enrollment to determine if your justification(s) for Advanced Standing Proficiency Examination is/are adequate to justify the testing effort.

If you consider the above to apply to you, list on the attached, the course(s) you wish to challenge and the means by which you developed the competency.

APPENDIX L

SAMPLE

REQUEST FOR ADVANCED STANDING PROFICIENCY TEST

(Please Print or Type)

NAME: ____________________

ADDRESS: ____________________

PROGRAM IN WHICH ENROLLING: ____________________

DATE: ____________________

Course(s) challenged by school catalog title and number: (list Below)	For each course challenged, show how you have gained the job qualification claimed that will support your request for challenge examination of a specific course, ie: (1) by a course of instruction in a recognized high school, (2) by on the job training, or (3) by job experience only. If from a high school or community college/technical institute, etc., show course name, number and transcript grade and hours (semesters) credit. If military, show military occupational specialty number awarded and training or school activity.

NOTE: The performance standards to be met when tested for course credit are the task performance standards required for job qualification by the average employer.

(Use Reverse Side if Necessary)

APPENDIX L- 1

APPENDIX L-2

Page____of____Pages

JAMES SPRUNT INSTITUTE
PROFICIENCY (CHALLENGE) EVALUATION RESULTS

NAME:________________________________ ADDRESS:________________________________

PROGRAM:______________________________ ________________________________

Course or Articulated Blocks of Instruction in Which Evaluated and Results: (Use additional pages if required)

Course (Block) Title	Course Number	Results - (Qualified or Unqualified)	Credit Hours Awarded	Evaluation Date

I certify that the student named was evaluated for advanced credit in the course(s) listed above on the date(s) shown. The evaluation results and credit hours awarded are as indicated. Where evaluated as "Unqualified" and no credit awarded, the student should be required to take the course(s).

Signature(s) Evaluating Instructor(s)

Approved: ____________________________Cse. No.______

Registrar:____________________________ ____________________________Cse. No.______

Date:____________________________ ____________________________Cse. No.______

SAMPLE

JOINT RESOLUTION

JAMES SPRUNT INSTITUTE
BOARD OF TRUSTEES

DUPLIN COUNTY
BOARD OF EDUCATION

The James Sprunt Institute Board of Trustees and the Duplin County Board of Education met respectively and unanimously adopted the following joint resolution.

WHEREAS, it is recognized that secondary and post-secondary institutions should provide well-coordinated occupational education programs for their students; and

WHEREAS, it is recognized that the need exists for better cooperation and coordination of such programs between James Sprunt Institute and the Duplin County Public Schools; and

WHEREAS, the aforementioned agencies have been awarded a $37,200 grant by the North Carolina State Board of Education for the purpose of improving articulation efforts and developing a model articulation plan for use throughout North Carolina;

NOW, THEREFORE, BE IT RESOLVED

that these boards hereby fully endorse the concept of articulation and to furthermore pledge their determination to successfully accomplish the objectives of this project.

Chairman
James Sprunt Institute Board of Trustees

December 11, 1974
Date

Chairman
Duplin County Board of Education

October 14, 1974
Date

APPENDIX M

A RECOMMENDED SEQUENCE FOR INITIATING CURRICULUM ARTICULATION ACTIVITIES IN LOCAL EDUCATIONAL AREAS OF NORTH CAROLINA

The initiation of efforts to articulate occupational education programs of instruction between a community college/technical institute and the local area high schools requires a series of recommended sequential actions. Most of these actions are described in detail in the State Pilot Model Articulation Policies and Procedures Guide. That document is the reference used in the following chronological outline of recommended curriculum articulation activities. (With minor title changes, the action column can also be applied to State level educational staff articulation activities.)

Time	Action	Reference
March-April (First Year)	President and Superintendent(s) jointly agree to articulate one or more programs	Concept I, Item 1a Page 9
April-May (First Year)	Board of Trustees and Board(s) of Education announce joint support of articulation effort	Concept I, Item 1a Page 9
April-May (First Year)	Organization of Joint Articulation Coordinating Committee	Concept I, Item 3, Page 11; Appendix A
May (First Year)	Local administrators, supervisors, counselors, and vocational/occupational education instructors for programs to be articulated are given detailed orientation and copies of the Articulation Policies and Procedures Guide	Concept I, Item 3, Page 11; Appendix A
May (First Year)	Organization of Joint Occupational Education Advisory Committee	Concept I, Items 2-3 Pages 10-11
May	Organization of an Occupational Advisory and Program Committee for each program to be articulated	Concept IV, Items 1-7 Pages 25-30

Time	Action	Reference
May (First Year)	Board of Trustees and Board(s) of Education announce joint appointment of appropriate Occupational Advisory and Program Committee(s)	Concept IV, Item 2e Page 27
May or June (First Year)	For programs already articulated in other areas, where an instructional objectives guide has been developed, the local occupational advisory and program committee meets to review that guide to determine if any local area task differences should be added as instructional objectives	Concept IV, Items 2-3b Pages 26-27
May (First Year)	Where a program has not been articulated and several other local areas have an interest in articulating the program, identify the instructors and advisors for the program to be articulated to participate in State-level program development actions	Concept IV, Item 3a Page 27
June-July (First Year)	State Occupational Advisory and Program Committee(s) meet to develop task inventories and appropriate draft instructional objectives guide(s) for programs not articulated. The new joint guide is to be used the following school year.	Concept IV, Items 4,5,6 Pages 28-29 Concept II, Item 2; Appendix B
June-July (First Year)	Draft guides are distributed for review to certain local Occupational Advisory and Program Committee(s). Changes in appropriate instructional objectives guide(s) if any are submitted to the state program committee.	Concept IV, Item 3, Page 27; Appendix K
July (First Year)	State committee reviews draft program guide comments and approves final guide for publication	Concept IV, Item 5, Page 28; Appendix K
August (First Year)	Printing of draft, statewide joint instructional objectives guides developed in June meetings.	Concept IV, Item 4d, Page 28; Appendix K

Time	Action	Reference
August (First Year)	State committee developed instructional objectives guides provided to all instructors, supervisors, deans, directors, counselors and principals	Concept IV, Item 4d, Page 28; Appendix K
September-June (First Year)	Instructors use instructional objectives guides to teach that part of program which instructor capabilities and time, facilities and equipment, and other resources allow	Concept II, Items 3 and 7 Page 18
September-June (First Year)	Local institutions conduct regular public information programs to inform community of articulation efforts	Concept I, Items 2 and 9 Pages 11 and 17 Concept II, Item 7 Page 24
September (First Year)	Determination of instructor use of guides	Concept I, Item 3 Page 11 Concept II, Item 7 Page 24 Concept V, Item 2, Pages 31 & 33; Appendix G
September (First Year)	Determination of counselor awareness of articulation activities and potentials	Concept I, Item 5 Pages 11-12
September (First Year)	Issuance of occupational task performance cards to students as well as their orientation to personal benefits of articulation	Concept V, Item 4 Page 32
September (First Year)	Practice and publicize the provision of advanced credit for occupational qualification	Concept I, Items 1-3 Pages 12-15
December (First Year)	Determine desirability of conducting a joint occupational trade fair	Concept I, Item 10 Page 17

Time	Action	Reference
January (Second Year)	Initiate planning for joint centralized testing activity	Concept V, Item 2, Page 31; Appendix G
March (Second Year)	Conduct trade fair (if determined feasible)	Concept I, Item 10, Page 17; Appendix J
April-May (Second Year)	Organize and conduct centralized testing activity	Concept V, Item 2, Page 31; Appendix G
June (Second Year)	Occupational Advisory and Program Committee(s) suggest(s) changes in appropriate instructional objectives guide(s) for the following year usage	Concept IV, Item 3, Page 27; Appendix K
June (Second Year)	Local Joint Articulation Coordinating Committees review State Pilot Model Articulation Policies and Procedures Guide and recommend changes (if any) for the following year	Concept I, Item 3, Page 11; Appendix A

NOTE: If agreements to articulate be reached earlier than shown on the sequence time schedule, the timing of preliminary actions, up to the end of the public school year, would be adjusted. State level meetings of joint committees, lasting more than one day, are best held after the end of the high school year.